Premiere Issue

EXTRA! 16-page Beat The Games Pull-out

VIDEO GAMES™

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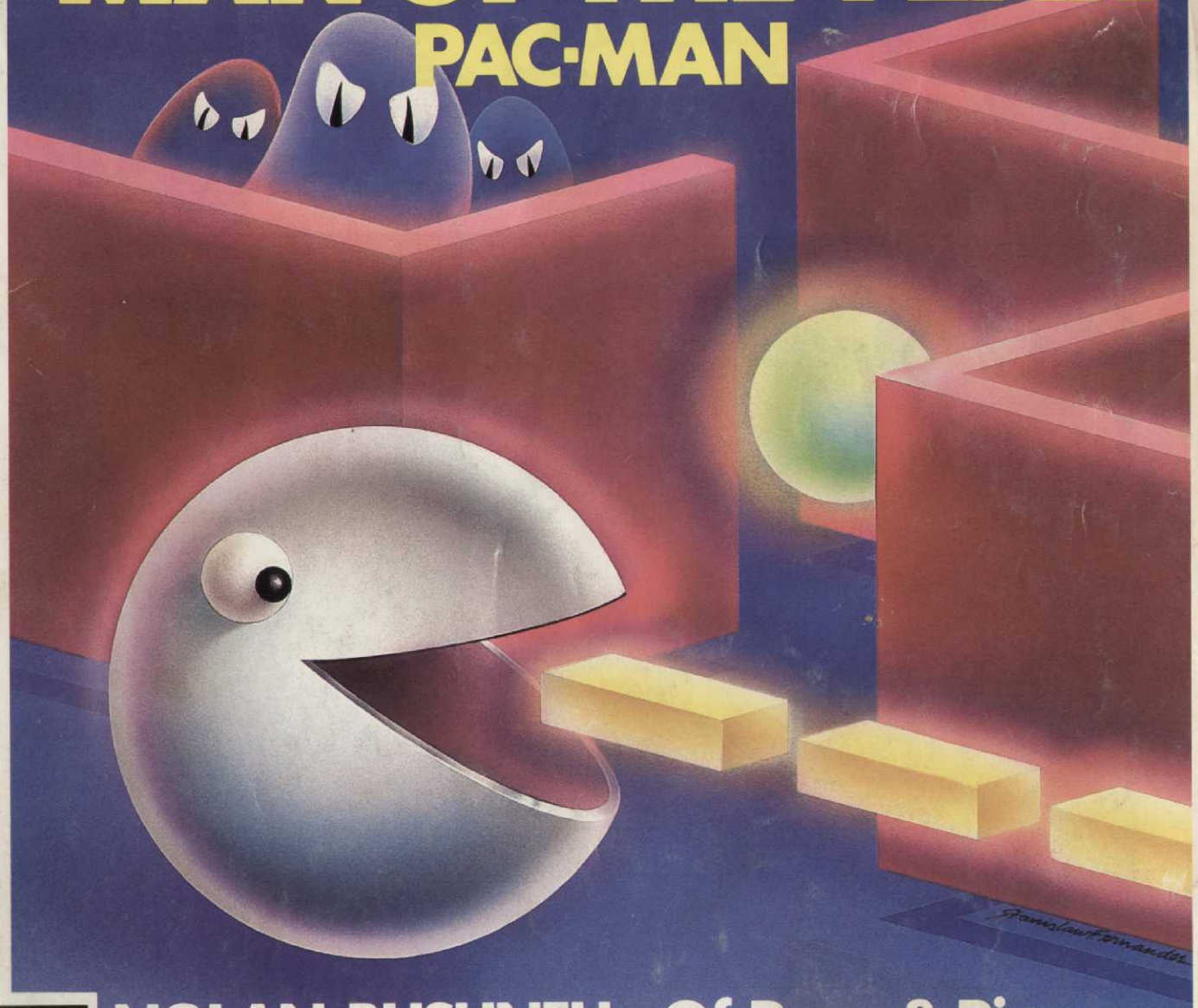
MAN OF THE YEAR
PAC-MAN



NOLAN BUSHNELL: Of Pong & Pizza

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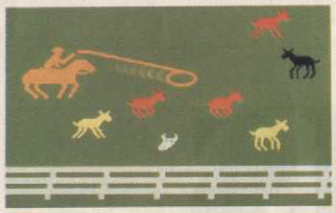
VIDEO GAMES

Volume 1, Number 1 August 1982



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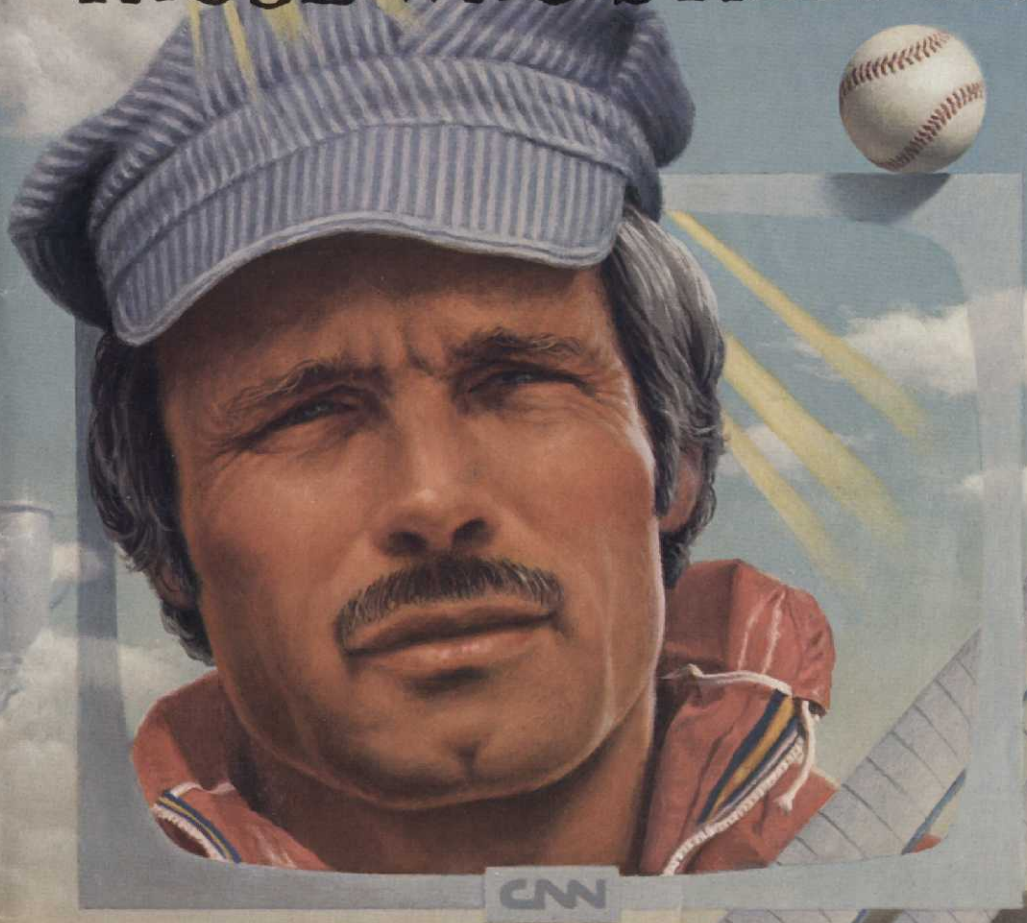
86 PROOF BLENDED SCOTCH WHISKY DISTILLED AND BOTTLED IN SCOTLAND IMPORTED BY THE BUCKINGHAM CORPORATION, NEW YORK, N.Y.

HERE'S TO GUT FEELINGS AND THOSE WHO STILL FOLLOW THEM.



Ted "Captain Outrageous" Turner

Ted Turner does lots of things people advise him not to do. And he succeeds at them. He turned Atlanta's WTBS-TV into a "Superstation" using a communications satellite and recently founded Cable News Network, the world's first 24-hour TV news network. He bought the Atlanta Braves and moved them out of last place; won the 1977 America's Cup after being fired in the '74 races; and was named "Yachtsman of the Year" four times.

Ted Turner puts his feelings where his mouth is. He also puts a great scotch there: Cutty Sark. And while he's been called Captain Outrageous by some, one thing's sure: Ted Turner's enjoying himself.

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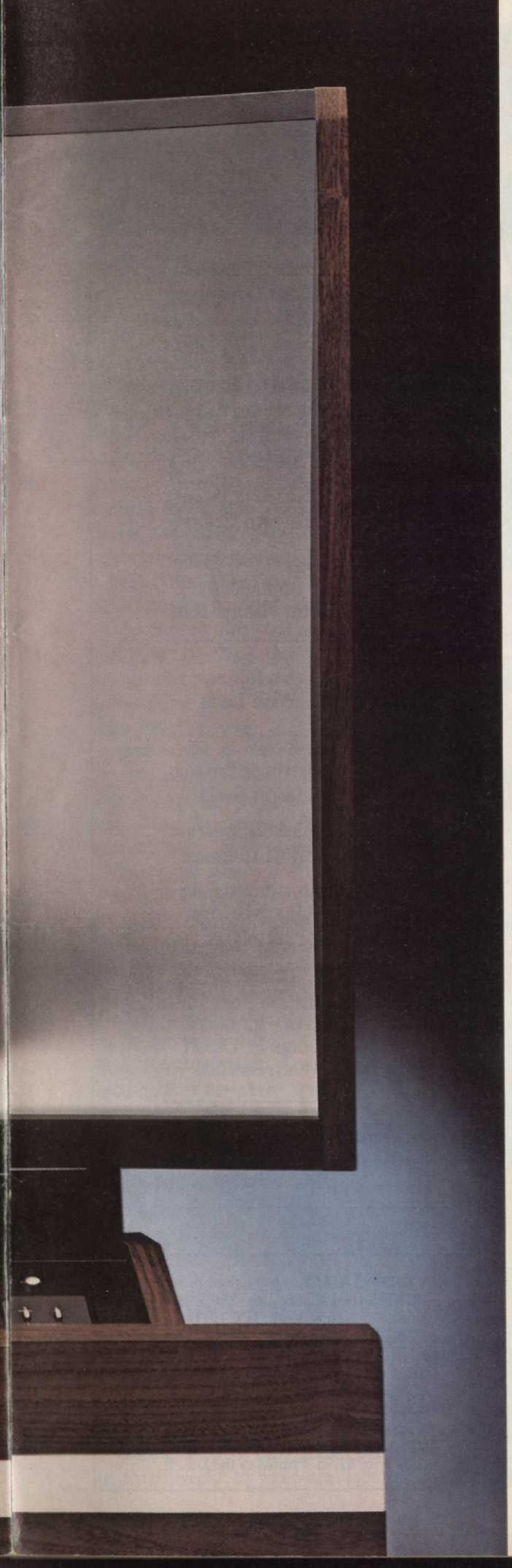

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HYPERSPACE

Photo by Alan Arpadi

Video games *aren't* a fad. What do you think about that?

I think it's true and I'll tell you why.

Video games earned more than all of pro baseball, basketball and football last year, ran neck and neck with records and films and even collected more cash than every one of Las Vegas' casinos. Dollars, however, don't always make sense.

Video games is a new form of entertainment and that's why all of its competitors are shuddering; they'd like to believe that it will go away but have that terrible suspicion that in one form or another these delightfully hedonistic playthings will be with us for quite awhile.

Space Invaders was a fad and so is Pac-Man. If you follow my drift, then so was "Bette Davis Eyes" or any of the countless Number One singles that have passed in and out of our lives forever. Add to that list popular films like *Star Wars* and *Raiders of the Lost Ark* (which, by the way, are being converted to video games)—fads for sure. The art and craft of making films, records or video games is one in the same. Only the by-product becomes a fad.

Enter **Video Games** magazine, stage-right. I think it's safe to say that as of yet, no print media has adequately narrowed in on the needs and interests of the rapidly-growing video game-playing public. There are reviews to be read, issues to be dealt with and behind-the-scenes personalities to be introduced—not to mention ten years of games history to be chronicled. We plan to do all of this *and more* in an intelligent, incisive manner.

In this, our premiere issue, we have assembled a most competent cast to carry out this task. We began by asking artist Stanislaw Fernandes to render Pac-Man—the industry's hands-down "Man of the Year"—for our cover. Not only did Stanislaw come through with a gold brick-gobbling munchkid, but added his unique touch to two other articles (see "Play Ball!" and DR. VIDEO). Since Pac-Man is so much on our minds these days, we had illustrator Denis Orloff provide his interpretations of the yellow fellow (see BLIPS and "Last Word on Pac-Man") as well.

For our first "**Video Games** Interview," we wanted someone who could speak for and about the games industry both articulately and provocatively. Our choice was Nolan Bushnell, the man whom many refer to as the "father of video games." Since departing from Atari, which he founded, Bushnell has gone onto several new and fascinating ventures. I think you'll find his comments invigorating.

In this issue, we're proud to unveil five departments that we hope you'll make a habit of looking for. The BLIPS section should be taken absolutely literally—it's where you'll find specks of information that mean a lot more than they may appear on the surface. DR. VIDEO will concern itself with the pros and cons of video gaming, clinically-speaking. HARD SELL should be able to provide you with answers to your questions about which TV-games systems and computers to buy. COIN-OP SHOP is strictly for arcaders only and BOOK BEAT for those who'd like to know more about all those video books that will be making the bestseller lists in the months to come. Lastly, a column devoted to game reviews will begin appearing in our next issue.

Sounds serious. It should also be a lot of fun. Get involved. Send us letters. Fill out the Reader's Poll. And don't forget that the 16-page "Beating the Games" pull-out is just that—snap it out of the middle of the magazine and take it with you to the arcades. Good luck.

S.B.

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Cheh N. Low

Associate Publisher
Michael Greenberg

Editor
Steve Bloom

Associate Editor
Perry Greenberg

Technical Editor
Howard Coors

Contributing Editors
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Woh Lech

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Alex Molina

Illustrators
Stanislaw Fernandes
Kevork Cholakian
Denis E. Orloff
Dan Steffan

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BLIPS

Q & A With Buckner & Garcia

Illustrated by Denis E. Orloff

Gary Garcia and Jerry Buckner are veteran studio musicians/ record producers who recently combined their talents with their enthusiasm for video games and came up with a Top Ten single. "Pac-Man Fever," a Southern rock-styled ditty, as of this writing has sold more than one million copies and the album of the same name may soon surpass that figure. In the record business, there's only one word for such sales: Platinum! Natives of Dayton, Ohio, Buckner & Garcia (as they are musically referred to) received a call from Arnie Geller, the "G" in BGO Music based in Rome, Georgia (he also handles the Atlanta Rhythm Section) during the fall. If they just happened to be into the video sensation, Pac-Man, Geller had a proposition for them. They were and agreed to author the first of nine tunes based on the most popular video concoctions. This interview with Buckner & Garcia, conducted by Perry Greenberg, tells all about it.

Video Games: How long did it take you to write the Pac-Man single?

Buckner: A couple of hours.

VG: That's all?

Garcia: Hell, it only took us three weeks to write and produce the entire album.

VG: You guys certainly work fast. Are you as proficient at playing the games you write about?

Garcia: At Pac-Man and Frogger I am.

VG: And you, Jerry?

Buckner: I'd have to say Centipede and Asteroids are my two favorite games. I'm also really good at them.

VG: Which of the two of you is the best gamer?

Garcia: I'd say we're both best at the games we prefer. Jerry blows me away at Asteroids.

Buckner: And I devour him at Pac-Man.

VG: Now that our readership is captivated, please explain how you got into video games in the first place and also how the record came about.

Garcia: Well, we're both into pinball. We were in an arcade last spring and saw all the kids playing the videos instead, so we decided to give them a whirl. Before long we were hooked on Pac-Man. Naturally, we wondered whether the games could be converted into good songs. But, we never got the project off the ground until Arnie called and asked if we were familiar with Pac-Man. As it turned out, he was hooked, too.

VG: Why did Geller call *you*?

Garcia: We've been writing and producing tunes for BGO for awhile. The first was, "Merry Christmas in the NFL," which as you probably know never hit real big. Then, we produced the "Theme for WKRP/Cincinnati," which was performed by Steve Carlisle. In addition to "Pac-Man Fever," we have an inspirational song that's presently number four on the country & gospel charts called "Footprints in the Sand." I'd say Arnie was well aware of our track record. Ugh—pardon the pun.

VG: I assume that you are fans of all the games you wrote about.

Buckner: Well, let's just say we were familiar with *most* of them. For a few, we went back to an arcade with gamers who showed us how to master them. I'd say we

did a little research, wouldn't you, Gary?

Garcia: Not to mention spend a few thousand quarters.

VG: So, has the phenomenal success of the album taken you by surprise?

Garcia: Not really. We've had other songs before that we thought could have been hits under the right circumstances. With the tremendous interest in video games, we knew that the album would get the promotional considerations necessary to make it a hit.

VG: Are you ostensibly saying that the primary reason for the record's success is the popularity of the games, not the merits of the songs?

Buckner: Not at all. The one thing we tried to do is make good songs, regardless of the games' sounds. If "Pac-Man Fever" wasn't about Pac-Man and didn't have the appropriate sound effects, we still feel it would've been a hit.

Garcia: We've always written what we consider good songs, but it did take a record with a very popular theme to make the people in the music business finally take notice of us.

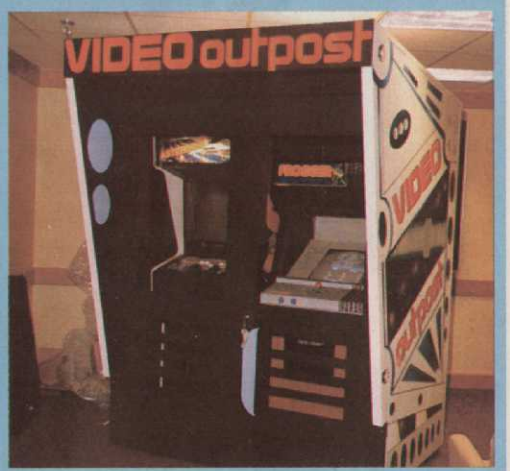
VG: Are you, however, worried about being stereotyped in the business as "those guys who wrote the Pac-Man song"?

Garcia: To be honest, we do worry about that—about being considered a novelty. But, if you remember, the Beatles were considered a novelty, and so were the Stones. We feel the music business is really a way of communicating with people and touching a responsive chord in their lives. When you've sold a million albums it proves you've done just that—so who cares what they label you?

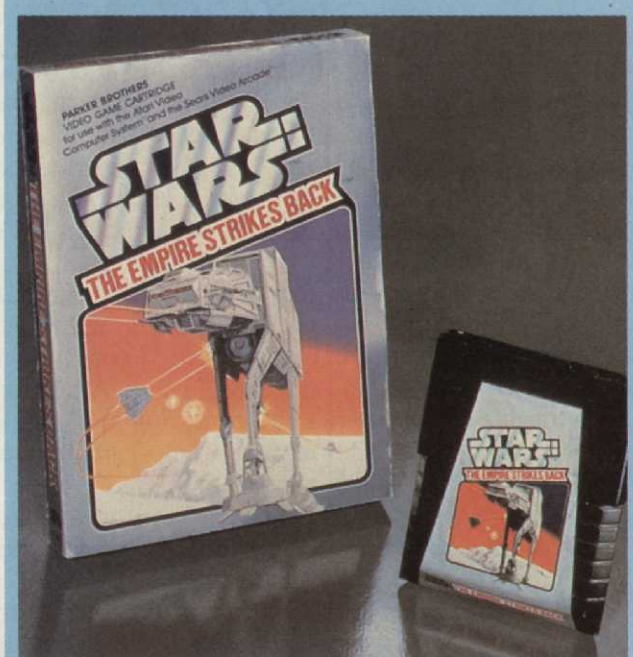
VG: The next single off the album is "Do the Donkey Kong." Is it your personal choice?

Buckner: We weren't given the liberty of suggesting what song would be released as the next single, but we are happy with the selection of "Donkey Kong." We feel there are at least three or four others songs that could also make it as singles.

Be the First on Your Block



(Above left) Plug any of EGI's 16 games into this $3,490 oak cabinet. Call 1-800-528-3350. (Right) Video Outpost is from the man who made New York's subway booths impenetrable. Call 516-288-5252.



From Parker Brothers comes "The Empire Strikes Back," the first of many film-to-game conversions. For play on the Atari VCS only.

Centuri's D-Day is licensed from Olympia, Inc. in Italy!

VG: Do you have any other news that you'd like to announce to our millions of readers?

Garcia: Sure do. First of all, a country & western version of "Pac-Man Fever" has been recorded by Edgel Groves. That should be climbing up the charts by the time your readers see this. And for our Japanese audience, we've changed the Pac-Man references to Puck-Man and released the single in English over there. I bet you didn't know that that's what they call Pac-Man in Japan. (Editor's note: Quite to the contrary. For the complete story of Pac-Man, turn to page 23—that is, of course, after you complete digesting this fascinating interview.)

VG: Do you have any plans to take your show on the road?

Garcia: We're readying to do just that. In fact, the band is rehearsing for a European tour, which will follow the release of the album there.

Buckner: We'll be taking an assortment of video games with us and projecting the games' graphics onto a huge video screen in the arenas. We're going to be one big, rolling, music and arcade review.

VG: I'm sure it'll cost a couple of quarters to get in.

Who is This Man?

Behind those shades is a man who knows no fear. When he walks into an arcade, players shudder. We call him Coleco Clyde.

Just the Tax, Jack

Dwarfed only by El Salvador and unemployment, video games continue to find its way into the news pages with great regularity. As Gilda Radner infamously intoned on "Saturday Night Live" several years ago: "It's always something." If it's not a report of a town council voting to ban arcades within a 50-mile radius, then it's Assemblymen like Ed Sullivan and Peter Grannis, both New York City Democrats, proposing to a state legislature that video games should be taxed at a preposterous rate of 25 percent. That's six cents on every play. That could add up to quite a booty for New York State should the assemblymen have their way.

What prompted this notion? Sullivan, a gracious politician who returns his phone calls, explains:

"It is rumored that there is excess profits in the video games business. I spent an entire month trying to find out just how many games there are operating in the state and how much money is coming in. No one would open their books to me. So I wrote up a bill calling for a 25 percent tax. I don't want to put anybody out of business. I'd just like the operators to prove that they're not making as much money as everybody thinks they are. I'm a reasonable man. I just want to see the numbers. After looking at the books, who knows—I might up the tax to 30 or 50 percent."

Sullivan claims that video games, unlike other forms of entertainment such as baseball games and movies, remain untaxed. Operators do pay a sales tax whenever they purchase a machine, but it is true that the quarters move cleanly from the coin box into the operators' pockets without a charge by the governement. Sullivan says he is simply asking operators to "collect the tax, not pay it."

Bart Gullong, a Long Island operator who would be affected by this proposal, admits that Sullivan's logic is "flawless—there is a perception about this industry that it's all found-money, a sort of pot-of-gold view, but it's not true. Even a 10 percent tax would put me out of business." Gullong points out that for every extremely profitable machine he owns (such as **Pac-Man**), there are countless bombs. "Take **Make Trax**, for example. I paid $3,000 for it five months ago and haven't made more than $700 back on it. If I could sell it for $800 today I'll be very happy. Now, the value of a **Pac-Man** is high, but remember I can't get all the **Pac-Man** I want. Believe me, this business is one big crap-shoot."

Meanwhile, Sullivan, who claims to be a fan of **Pac-Man** ("I never hit 20,000") and a foe of **Asteroids** ("I get blown away"), will attempt to bring the bill to the floor before the Legislature's session ends in June. "I don't oppose the games," he maintains. "I simply believe that we have here an instance of where money is being exchanged for service and not being taxed. Let's face it, with all the Federal cuts, the state could use that cash."

Accused of shaking down video games operators in order to balance the state's budget, Sullivan candidly replies, "Last year we shook down the banks—this year it's video games."

—Steve Bloom

BLIPS

Best Little Court Case in Texas

The most celebrated legal showdown in the coin-operated games industry's recent past must go on. That was the finding of the Supreme Court last February when a 7-2 majority decided to "remand for clarification" to Texas, (the Mesquite versus Alladin's Castle age-limit duel.

What duel? Briefly, nine years ago, Mesquite (a suburb of Dallas) passed an ordinance banning minors unaccompanied by adults from playing video and pinball games. When, two years later, Mesquite relaxed that ruling at the request of the Bally-owned Alladin's arcade chain, then rescinded their license (the police chief had suddenly determined that Alladin's had "connections with criminal elements"), all hell broke loose.

In legal round one, the District Court sided with Mesquite; round two saw the Fifth Circuit of Appeals reverse that decision. By fall of 1981, the principals argued at length before Burger's court. While it acted conclusively regarding the police chief's inquiry ("no constitutional objection to an ordinance that merely required an administrative official . . . 'to make such investigation as he deems appropriate' before formulating a recommendation"), the Court put off the more controversial age question.

Wrote Justice Stevens: "Because learned members of the Texas bar sit on the Court of Appeals for the Fifth Circuit, and because that court confronts questions of Texas law in the regular course of its judicial business, that court is in a better position than we to recognize any special nuances of state law." He then concluded: "If Texas law provides independent support for the Court of Appeals' judgment, there is no need for decision of the federal issue . . . the case is remanded for further proceedings consistent with this opinion."

After months of waiting anxiously for the decision, each side reacted differently. "Obviously, we were pleased with the 'criminal elements' verdict," gloats Mesquite's attorney, Elland Archer. "The age-limit question may be of great concern nationwide, but to us Bally's operation here is more crucial. We are determined to keep organized crime out of our city."

As to the non-decision, Archer believes that the Supreme Court was "uncertain about the Fifth Circuit's ruling that the ordinance was contrary to both the state and federal constitutions. They'd like to know whether the two constitutions are congruent."

David Maher, attorney for the Amusement & Device Manufacturers Association, which filed a friend-of-the-court brief on behalf of Alladin's, is not so kind. "Let's face it," he scowls. "The Supreme Court likes to duck difficult decisions. In this case, ambiguity was the key. The slightest ambiguity in the previous decision is enough to warrant a remand. Surprised? The Supreme Court never fails to surprise me."

Maher predicts that the case, now back in the Court of Appeals, could drag on for yet another year.

—Steve Bloom

SF to Atari: Thanks

Illustrated by Denis E. Orloff

Atari recently joined the campaign to "Save the Cable Cars" with a million-dollar donation. The committee still needs $2.7 more. Call 415-956-3777.

Welcome to CES!

Speak software and carry a big joystick. This could very well be the slogan of the TV-games industry. At least it would seem that way judging by the staggering number of new hardware systems and game programs that will be unveiled at the Consumer Electronics Show from June 6-9 in Chicago.

Here are a few of the new items that will make their debuts:

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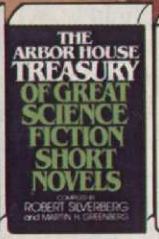

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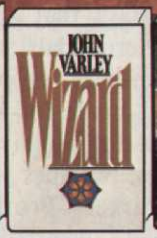

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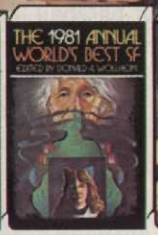

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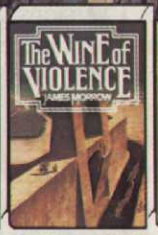

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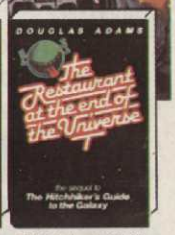

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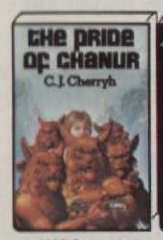

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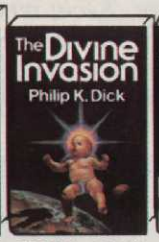

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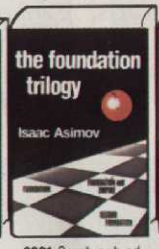

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2543 Dragonflight; Dragonquest; The White Dragon. Comb.pub.ed. $26.85

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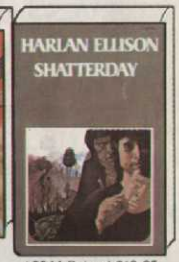

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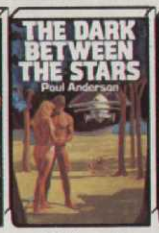

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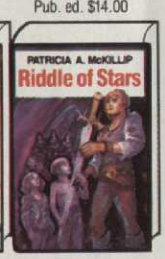

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BLIPS

a programmable TV-games unit. Priced at only $129.95, its most remarkable feature is a 12-volt adaptor which allows hardened gamers to take the 2001 with them. At presstime, titles of the 20 cartridges were not yet revealed.

•Coleco's own programmable, ColecoVision, which was first shown at the Toy Fair last February, and at least 13 carts (including Donkey Kong, Turbo and Mousetrap). Nine made-for-Atari VCS and 11 made-for-Intellivision carts as well.

•Atari's 5200 Advanced Video Entertainment System (we'll be the first to dub it VES) and as many as 14 carts, including Star Raiders, Taito's Qix and a game version of the film, *Raiders of the Lost Ark*. Plus, seven new carts for the VCS, including *Raiders* and new versions of baseball, football and soccer. Ever since Atari won exclusive video games sponsorship for the '84 Olympics, they began designing an official Olympics Volleyball cart. It could be ready for viewing.

•Apollo's four new carts, Space Cavern, Lochjaw (*the* Loch Ness monster meets a shark), Raquetball and Lost Luggage (gorillas go mad at the baggage claim).

•Activision's undisclosed new made-for-VCS carts. Expect one pair only. According to a company official, one will be an adventure game while the other is a fantasy that definitely is "not terrestrial."

•Imagic's crop includes four made-for-VCS and three for-Intellivision-only games. No titles yet.

•Parker Brothers' anxiously awaited *Empire Strikes Back* rendition, in which Imperial troops do battle with rebels on the Ice Planet, and Sega's arcade favorite, Frogger—both made-for-VCS carts.

•General Consumer Electronics' extravagant ($200) tabletop unit, Vectrex. Supposedly, its vector monitor is able to duplicate 3-D simulations like those in the arcades. In addition to the built-in game, Mine Storm, Vectrex has 12 carts such as Star Hawk, Star Trek, Scramble and Berzerk. Although graphics are black-and-white, color overlays are available as an enhancement. For one player only. A second control panel can be purchased as an accessory for $25. *—Randi Hacker*

Four Score and Seven Billion Points Ago . . .

For all you joystick wizards and master gamesters out there who've been wondering if your scores stack up with the best, Walter Day, manager of the Twin Galaxy Arcades in Ottumwa, Iowa and Kirksville, Missouri, and a master gamesman in his own right, has been devoting countless hours in an effort to establish the Twin Galaxies as the national headquarters for record video scores. Here are the top scores of 14 games tabulated at Day's Video Central. Except for Galaxian, all records were achieved this year.

•Defender		**•Galaxian**	
33,000,013,200	April 3-4	134,900	Nov. 30, 1981
Rick Smith	Mission Viejo, Ca	Dan Fogelman	Ottumwa, Iowa
•Stargate		**•Scramble**	
3,900,000	April 8	326,270	March 21
Kip Howse	Orem, Utah	Matt Brass	Kirkville, Mo.
•Donkey Kong		**•Centipede**	
270,000	March 1	3,058,437	April 3
Steve Sanders	Shawnee, Kan.	Sterling Ouchi	Lakewood, Ca.
•Tempest		**•Make Trax**	
512,674	March 15	1,508,312	March 20
Jane Nelson	Huntington, W. Va.	Walter Day	Ottumwa, Iowa
•Pac-Man		**•Asteroids**	
5,579,350	April 3	20,307,890	March 12-15
Paul Padriana	Lakewood, Ca.	Mike Titus	Chino, Ca.
•Frogger		**•Galaga**	
71,400	March 11	1,547,000	April 4
Pat Quinn	Ottumwa, Iowa	Casey Murphy	Gullickville, Tenn.
•Berzerk		**•Qix**	
59,770	April 5	231,000	March 18
Glenn Dickenson	Kirkville, Mo.	Tim Wood	Port Richy, Fl.

BLIPS

Video games are cartoons so it should not come as a great surprise that many of the country's comic strip artists have begun to try their hands at what is fast becoming one of our national pasttimes. While Gary Trudeau ("Doonesbury") characteristically zeroes in on the military-industrial complex with his weeklong series of computer war-games, Jeff Miller and Bill Hands ("Tank McNamara") created a timely hockey video called "Great Gretzky" ("Try to skate down the ice and shoot the puck into the net without being torn apart by the defense monsters") and also parodied a hearing over a proposed ban of video games. Finally, Cathy Guisewite ("Cathy") exposed what probably is her own habit with a number of Pac-related strips.

We have selected the best-of these artists video games works for those of you who might have missed them. *Video Games* will continue to do this in the future.

DOONESBURY

by Garry Trudeau

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TANK McNAMARA

by Jeff Millar & Bill Hinds

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CATHY

by Cathy Guisewite

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Nolan Bushnell

King Pong is now the head cheese at Pizza Time Theatre, a fast-food chain that serves up video games for dessert. His motto—"When I see a concept that makes sense I have to put it into action."

Nolan Bushnell, 39, is the most legendary figure in the brief—but frenzied—history of video games. In 1971, while still working as a $12,000-a-year research engineer for the Ampex Corporation, Bushnell and a partner—Joe Keenan—each contributed $500 to start a video games company. One year later, that infant operation (then named Syzygy), which had begun as a lab in Bushnell's daughter's bedroom, became Atari, Inc. Atari ultimately developed and marketed 35 types of video games before selling the company to Warner Communications for $32 million—Bushnell's take was just under half of that—in 1976.

That same year, while still with Atari, Bushnell designed a family entertainment center for San Jose's Town and Country Village. His idea was to combine a quality pizza restaurant with a video arcade and have a trademarked Cyberamics system of three-dimensional, computer-controlled characters with names like Chuck E. Cheese, Jasper T. Jowls and Harmony Howlette, entertain the diners. That first small unit, opened in 1977, served as a prototype for Pizza Time Theatre, Inc., Bushnell's current major business interest. Pizza Time has more than 60 centers now in operation.

VIDEO GAMES recently interviewed Bushnell at Pizza Time headquarters in Sunnyvale, California. His office is small, but somewhat opulent by Silicon Valley standards (old-line CEOs like Charlie Sporck of National Semiconductor and Robert Noyce of Intel don't have private offices—only partitioned spaces). The dominant features of the room are a larger-than-life papier mache carnival figure, a beer cooler disguised as an antique cabinet and large, burgundy-colored distinctly Edwardian English leather club chairs. A photo of Bushnell's attractive wife and young son sits atop a bookcase where copies of books by Albert Camus and Mark Twain rest alongside tomes with titles like **Pulse, Switching & Digital Wave Forms.**

Bushnell, himself, cuts an Edwardian figure; tall, bearded, a slight paunch that suggests that the antique beer cooler is still functioning. He is a friendly, candid man with a self-confident manner that many people mistake for ego. On this particular day, he's sporting a blue blazer and grey slacks, an Armani tie and loafers. This is as close to getting dressed up as anyone comes in Silicon Valley. Bushnell radiates a lot of energy and throughout the interview moved from one chair to another all the while fiddling with his pipe.

VIDEO GAMES asked Jerry Bowles, a freelance writer whose most recent book **A THOUSAND SUNDAYS -The Story of the Ed Sullivan Show** *was published by Putnam's, to take time out from his busy schedule during a recent visit to California and interview Bushnell. Their conversation went something like this.*

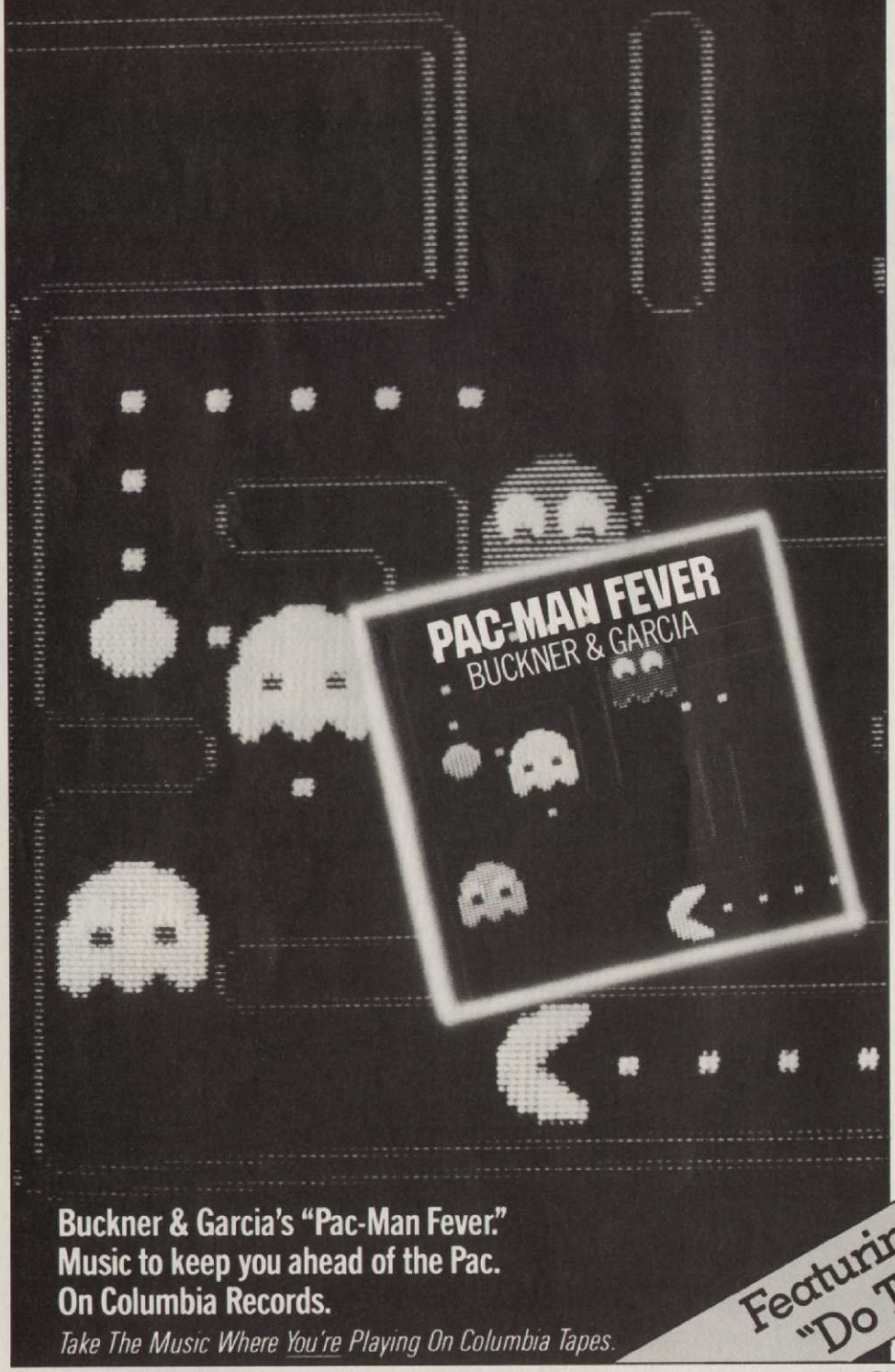
* * *

VIDEO GAMES: You're aware, no doubt, that some of your contemporaries have taken to calling you the "godfather of video games." It's an apt conceit and makes an interesting point about the similarities between the high technology and film industries. The players are essentially the same: risk-takers, creative types, venture capitalists, and so on. In some ways, your career parallels that of George Lucas. If Atari was your "Star Wars," then Pizza Time is "The Empire Strikes Back."

BUSHNELL: That's a good point. The similarities are certainly there. There's a lot of money and glamour in both industries. I must confess, however, that my Hollywood hero was Walt Disney. He was one of the great American entrepreneurs. A little boy once asked him if he drew Mickey Mouse. He said he didn't. The boy asked him if he directed the studio's movies. Again he

PIZZA

"Pac-Man Fever." The one and only album for a video-crazed America.



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Produced by Jerry Buckner and Gary Garcia in association with the Buie Geller Organization.

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"People have an ingrained notion about leisure—essentially, anything that's fun is somehow not holy."

had to confess that he didn't. "Well, what do you do," the boy asked. Disney replied, "I'm sort of like a honeybee. I fly from flower to flower and pollinate them." That describes what I do.

VG: That raises another interesting point. The press always credits you with being the creator of Pong, Atari's original video game. But, as I understand it, you didn't actually write the program.

BUSHNELL: That's true. The software for Pong was written by an engineer named Al Alcorn. Pong was really a mistake. The game I was really going for was a driving game, but I had just hired Al and didn't feel he was quite up to that speed. I asked him to do a sort of simple Ping-Pong kind of game as a practice exercise, a throwaway, really. It turned out to be a heck of a lot of fun, so we decided to market it on the way to the driving game.

VG: Then, you are admitting there is some question about the authorship of the game?

BUSHNELL: Well, it's one of those funny things. Al and I talk about it all the time. He did the software, but I designed the game. I sat down and said the ball should act this way and the sound should sound like that—that sort of thing. He executed it. Alcorn steadfastly maintains that he designed it and I maintain that I did. I always tell him I get the credit because I have more access to the press than he does.

VG: Let's go back in time a little. When and where did you first become interested in video games?

BUSHNELL: There were a couple of factors involved. My interest really began in the early 1960s when I was studying electrical engineering at the University of Utah. They have a good computer science department there headed by Dr. David Evans, one of the pioneers in the field of computer graphics. Anyway, I used to go over to the department at night and play an old game called Space Wars, which had been written on the first computers at M.I.T. It was a good game, although a little advanced for its time.

Every summer while I was in college I worked as manager of the games department of an amusement park in Salt Lake. I was struck by how old-fashioned most of those attractions were. I mean, knocking milk bottles over with a baseball is not the most contemporary game in the world. I got to thinking one day that there would be a tremendous market for a computer game like Space Wars. But it just didn't make economic sense at the time. It would have taken a heck of a lot of quarters to pay for an $8 million computer. So I just filed the idea in the back of my mind.

VG: When did you—as they say in computer parlance—retrieve it?

BUSHNELL: Around 1969 or 1970. I was working for Ampex in Redwood City as a research engineer by then. Microcomputers had just begun to hit the market and I could see my idea becoming more viable. Originally, I envisioned linking a number of video screens to one central computer. But as I kept adding more and more elements, one day it just hit me: I can do this whole thing in hardware. Once I figured that out, though, the economics seemed overwhelming.

VG: What was your first game?

BUSHNELL: It was called Computer Space. Actually, it was a refinement of Space Wars. It was a good game, but a little ahead of its time. We only sold about 2,000 units, but that was enough to get us off the ground. We also operated a 100-unit route at night. With our technical skills, we were able to put back together old junker games that we had picked up dirt cheap. It provided cash flow.

VG: What kind of corporate structure did you have at the time?

BUSHNELL: Complicated. I had started a company called Syzygy and through that sold Computer Space to a local firm, Nutting Associates. Then, I went to work at Nutting to put the unit into production and to refine it. Syzygy

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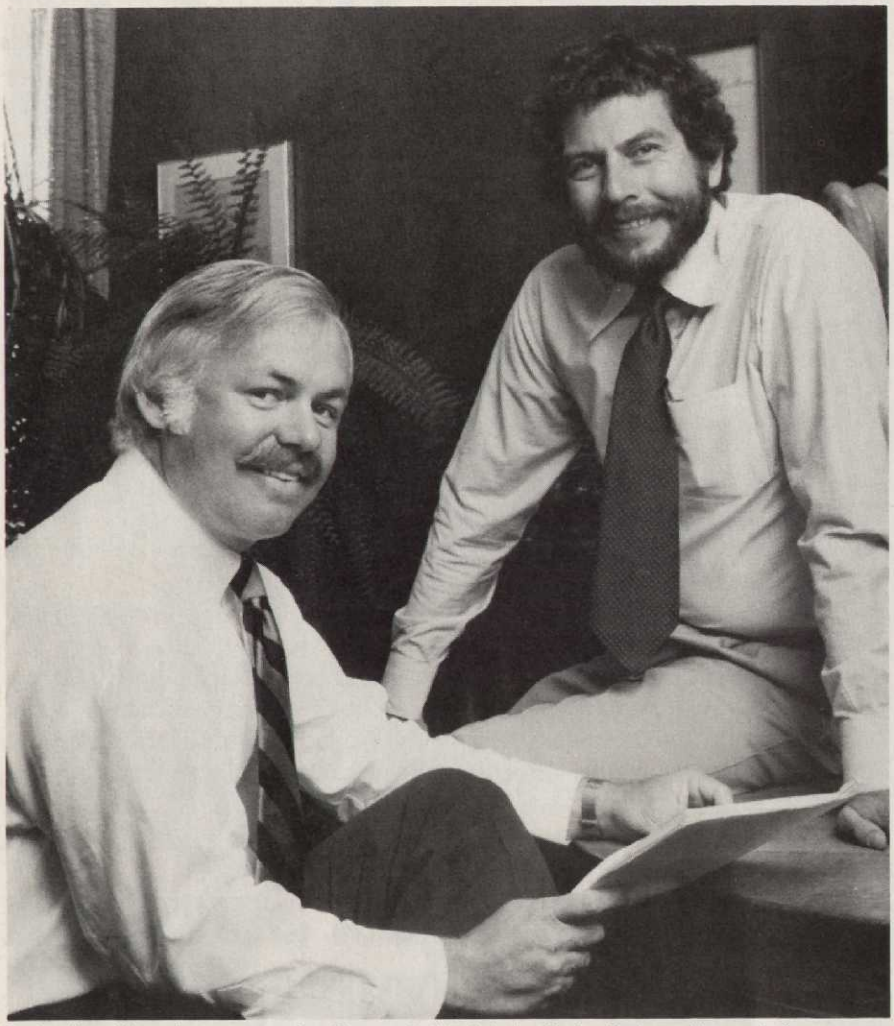

Bushnell and longtime partner Joe Keenan (left). Admits Bushnell about Keenan's former company, "It was a kind of subterfuge."

was just a partnership, but when we tried to incorporate we found that the name was already taken. That's when we changed the name of the corporation to Atari.

VG: And why Atari might I ask?

BUSHNELL: In the Japanese game of Go, Atari is a polite warning to your opponent that he's about to be engulfed. It's something like check in chess. I just thought that that was a neat name for a corporation.

Anyway, Nutting never really understood the relationship that was required for me to stay with them. After Computer Space was in production they said "OK, Nolan, you're head of engineering—how about designing another game for us?" And I said, "OK, let's figure out how much of Nutting Associates I get." I saw it as a situation where I was helping them get into a new business, but they said they were Nutting Associates, big and strong, really smart guys. It was obvious to me very early on that they were not smart guys in terms of business strategy. Anyway, I said, "What I want is an option on a third of the company and more say in the marketing strategy." They basically said, "No, Nolan, you're a good engineer. We'll give you five percent of the company on an option if you stay in engineering. We'll take care of the marketing." And I said, "Nyet!" Two days later, I resigned and set up Atari.

VG: With $500, as the story goes.

BUSHNELL: Well, actually it was a situation where Syzygy was set up for $500. I had negotiated a royalty rate from Nutting for Computer Space , so, in reality, Atari was founded on royalties from Computer Space.

VG: Then, there was a company called Kee Games, Inc. which merged with Atari in 1974. Who were they and how did they fit into the picture?

BUSHNELL: Kee was a marketing ploy. You probably know that Joe Keenan and I have been close friends and partners in business since the very beginning. Joe was president of Kee and ran the company. The reason we set Kee up is because each city had two major distributors and each one demanded an exclusive contract. That left the other guy, who was usually almost as strong, without a source of video games. These guys were running around like crazy trying to get manufacturers to supply them with games so they could compete with the guy down the street. We knew we had a technological lock, but we didn't have the marketing lock. So we formed Kee Games and operated it as a separate company even though it was primarily owned by Atari. It was a kind of subterfuge, if you will. Whenever Atari would come out with a game, lo and behold, Kee would produce an equivalent or a modified version. That way we were able to keep other manufacturers out of the market, at least for awhile. It was a distribution game. Strategy! Gameplay! Joe left Atari in '79 to join me here. He's the president and CEO of Pizza Time.

VG: Let's talk about your latest collaboration with Keenan—the Pizza Time Theatre. When and how did that idea get started?

BUSHNELL: I first came up with the idea around 1974. We were moving toward its realization when I sold Atari to Warner Communications in '76. Warners went ahead and opened one center; but they were clearly not very interested, so Joe and I bought the concept back from them for $500,000 in June, '77. The following year we raised some more venture capital and incorporated.

VG: I've understood that you hated the way video games were being presented. Was this a factor in your decision to start Pizza Time?

BUSHNELL: Definitely. I felt there were a lot of people who would like to

(Continued on page 78)

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From Steve Bloom's 'Video Invaders'

THE ABSOLUTELY, POSITIVELY LAST WORD ON PAC-MAN

The acknowledged King of the Arcades now has a wife, a hit record and more spin-offs than 'Dallas' and 'All in the Family' combined.

I've got a pocket full of quarters and
I'm headin' to the arcade,
I don't have a lot of money
but I'm bringin' everything I made,
I've got a callous on my finger and
my shoulder's hurtin' too,
I'm gonna eat 'em all up
just as soon as they turn blue.
Now I've got 'em on the run and
I'm lookin' for the high score,
So it's once around the block and
I slide back out the side door,
I'm really cookin' now,
eatin' everything in sight,
All my money's gone,
so I'll be back tomorrow night.

— "Pac-Man Fever" by Buckner & Garcia (©1981)

The scene: a Brooklyn shopping district, outside a delicatessen. The time: after school. A Pac-Man machine is chained to the store's security gate and two teenaged girls on roller skates have the game all to themselves. They are sharing a can of Pepsi, a bag of Pretzel Nuggets and, best of all, Pac-Man.

Lisa is by far the better player of the two. While Lisa claims to have scored over 100,000 points yesterday, Maureen is struggling in the low 20s. Lisa doesn't kid around. Ever so nonchalantly, she completes maze after maze and talks to me at the same time.

"I play all the time," Lisa explains as she shakes two ghosts and swallows a power dot. "This, Space invaders, Galaxian, and Phoenix are my favorites. The trick to Pac-Man is the pattern. Just watch. That's how I learned. Everyone cheats off of everyone else."

Maureen, meanwhile, stands by impassively, waiting her turn. She has nothing to say.

"Oh, I hope I get to the bells," Lisa says greedily. The bell is one of the many bonus targets only star players like Lisa get to go for in later rounds. Finally, she is cornered by the so-called "ghost monsters" and her turn is over. With one Pac-Man remaining and a reading of 65,000, Lisa just may break her record.

As Maureen takes over the joystick (four-way lever control), I pepper Lisa with more questions. She acknowledges spending her allowance on the games; when I ask her if her parents mind at all, Lisa whines like the 14-year-old she is.

"It's my allowance," she insists, adding for good measure, "I bought these skates with my allowance, too." So there.

"Do they care?" I press on.

"Nah, they don't care."

Maureen is having problems. When her last Pac-Man gets bitten she bangs the glass, screaming that the game is messed up.

"How come it's OK for me?" Lisa sneers. But she's about to get hers, too. A minute later Lisa's skates nearly slip out from under her and the final Pac-Man is eliminated. So much for her record-breaking attempt. Next quarter.

* * *

Pac-Man is like a good old-fashioned B movie. It starts out with titles, credits, and a musical theme that sounds vaguely similar to the old standard "A Night in Tunisia." Instead of anonymous aliens dropping from the sky,

"Video Invaders" is an Arco Publishing book.

Illustrated by Denis E. Orloff

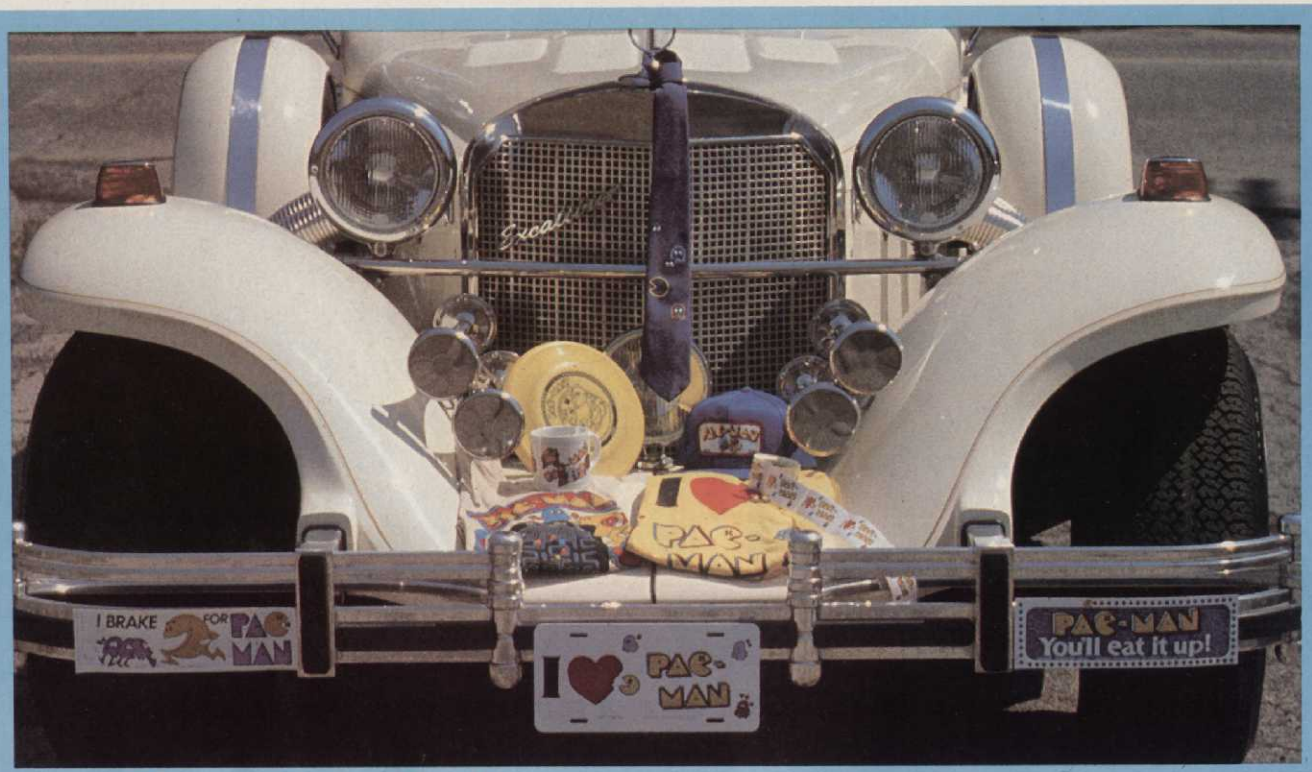

Photo session courtesy of Vintage Car Store, Inc., Nyack, New York. Model: 1982 Excalivur Series IV Phantom.

Pac for Sale

Pac-Man may mean many things to many people, but to fledgling businesses like Wiz Kids, Video Babies and Amusement Marketing Concepts, it's a good, quick buck. All are involved in the merchandising of video game-related products from frisbees to license plates (see photo). But, according to David Rabiner of Video Babies, the going is getting tough.

"We got in before it got hot," he says. "We got some good licenses (including Pac-ties and "I Break for Pac-Man" bumper stickers). "Now the big boys are moving in. I understand Uniprints advanced Midway $100,000 for the t-shirt deal. That's about $95,000 more than we can afford."

—*S.B.*

though, we meet Inky, Blinky, Pinky, Clyde, the four dauntless "ghost monsters" whose shifty eyes you must constantly watch. Needless to say, they are the bad guys. Pac-Man, the hero of our story, is a frisky yellow disk with a pie-cut for a mouth, who aims to run these pesky varmints out of town. And run is exactly what these five vid kids do—all around a blue maze.

Pac-Man, like one of the gunslingers of old, out-numbered by merciless outlaws, is saddled with an enormous task: He must avoid this colorful gang of four while swallowing up the 240 white dots that cover the paths of the maze. Each dot gobbled is worth ten points and is accompanied by a rapid succession of chortling noises. As long as the Pac-Man can keep his distance from the bug-eyed boys, he seems to be having a helluva time. But one false move and he's gone—literally—the Pac-Man folds up and disappears. If he manages to eat all 240, he gets a fresh supply and a new start.

There is more, of course. The power capsules stationed in each corner are the gateways to higher scores; use them wisely and you can add 3,000 extra points with a few well-timed gulps. When Pac-Man gobbles a capsule, the gang suddenly turns blue and dashes away. They can be feasted upon now, but Pac-Man's advantage only lasts a moment. The ghosts soon return to their menacing form and the chase resumes. The third and final source of points is the bonus target, which switches identity (from cherries to keys) and increases in value the farther you get along.

Each time you clean out a maze you get an identical new one, but the ghosts pick up the pace. The prize for completing the mazes, aside from extreme gratification and an ever-increasing point total, are some brief intermissions, during which the cast puts on a little show. In the first, a giant Pac-Man terrorizes one of his rivals in a madcap romp about the mazeless stage; in the later breaks, he visits further humiliations on the villain. Though there's no time for popcorn, these respites come in handy — in fact, you'll need them. Like every great video game, Pac-Man grows more difficult with each screen, challenging you not only to outwit it, but to physically keep up with it. With its simple joystick, though, how could anyone resist?

Pac-Man fever, it's driving me crazy,
Pac-Man fever, I'm going out of my mind.

—Buckner & Garcia

It starts with the wait, with the quarters lined up on the ledge of the machine. Before long, it's T-shirts, pop singles, news of the latest ailment resulting from compulsive play of a particular game, reports of profits that would feed all of West Africa. And if the story isn't "I Was a Space Invaders' Zombie," then it's "I Was a Teenage Pac-Maniac." But where Space Invaders was a global phenomenon, Pac-Man has become America's game. With 100,000 units on the streets, it has surpassed Space Invaders and Asteroids, the previous Crown Princes of

Video, to become the acknowledged King of the Arcades (and inspiration of countless imitations).

That Pac-Man is a Japanese creation may seem ironic, but, in reality, it is the least unusual part of this story. While breaking ground in both maze design and its novel use of cartoon-type characters, it is probably best recognized as the game that dragged women out of the video closet and into the arcades. Traditionally, men have had the arcades largely to themselves. But Namco's Pac-Man changed all that. Though it clearly was not intended that way (as we will see), Pac-Man is even now being hailed by some as the first "women's" video game.

Atari's Donna Taylor is one of the very few non-male game designers in the field. Asked for her opinion of Pac-Man, she says, "I admire it a lot. I think it's proved that you don't have to be lost in space to have a good time."

To Taylor, easy controls are the real key to Pac-Man's success. "I won't play buttons. I just don't think it's worth the trouble. I know plenty of other women who feel that way, too." She cites Defender, with its five buttons and joystick, as the "worst" offender and credits much of the acceptance of her own game, Centipede (which utilizes the Trak Ball and a fire button) to its "minimum of controls."

"Another problem," insists Frank Ballouz, Atari's Vice-President of Marketing, "has always been where the games are located. You won't see a lady hanging around most arcades or 7-11s to play. But now that you find the games in lounges, airports, and restaurants, women are being exposed to the product more often." And now that manufacturers have awakened to the fact that women will play, they aren't going to ignore them again.

The stories of some women's compulsive attachment to Pac-Man have already made the rounds. Take the case of a Florida beauty salon owner who installed the $2,500 machine on the premises, or the more farcical tale of a wife who threatened to leave her husband unless he could prove to her that Atari had not already released its Pac-Man cartridge (which it hadn't at the time). According to an Atari spokesperson, one phone call from the company to this slightly hysterical woman was enough to patch up the matter — and the marriage.

Don't think the industry isn't ready to capitalize on their new-found friends. But where Centipede and Frogger were arguably designed with women in mind, Midway's stunning follow-up to Pac-Man — titled Ms. Pac-Man — leaves no room for argument.

Made up with a bow and ruby-coated lips, the Pac-Man has swung the other way, so to speak. Plus, the maze has been redecorated. Just take a look: Ms. Pac-Man has painted the maze pink, moved the fruits and other bonuses around at random, and opened up two more escape tunnels — it was getting pretty stuffy in there, wouldn't you agree? But this is all lukewarm-to-medium camp compared to the intermissions. Act One (following the second screen) flashes back to that eventful day when Pac-Man and Woman met; Act Two follows their courtship and subsequent nuptials; in Act Three, a stork appears, delivering none other than Pac-Baby. No joke!

"Like every great video game, Pac-Man challenges you not only to outwit it, but keep up with it. With its simple joystick, how could anyone resist?"

* * *

Pac-Man wasn't designed for women. Over in Japan, where the game was invented, women had always played all the games — from space battles to car chases — as fanatically and skillfully as the men. By 1980, the question facing Japan's games community was not how to attract women, but how to rekindle flagging player interest in general. Space games, which had won Japan its honorable reputation in the business, had suddenly bottomed out. To Atari's surprise, Asteroids — the hit of the year here — bombed out miserably over there. "I could never understand why it was a good game," contends Yoko Yama, a representative for Data East. "I think as a people, we did not understand it. It was very difficult for us to play." Again, the controls were causing complications. "We found the buttons hard to operate," he says. "The U.S. likes buttons. We are much happier with levers. I don't know why that is. Maybe it has something to do with typewriters." (They're not nearly as common in Japan as they are here.) In any case, space was out. And what was in? Comedy.

According to Yama, the Japanese have a "comical sense," and are great fans of comic books, sitcoms, and cartoons. Taito-America's president Jack Mittel tries to explain: "They [the Japanese] want more of a story line, more of a Walter Mitty experience that's like a whole movie. They are very cutesy." Yama believes that the Pac-Man characters are a composite of those that appear and have appeared in Japanese comic strips and books, but can't pinpoint which ones. He is positive, however, that several of Pac-Man's successors (such as his company's Lock'n'Chase and Treasure Island) are direct representations of Japan's most popular cartoons and strips.

No company had less experience than Namco Limited for developing a comical game. Though Galaxian — which was essentially a new, improved Space Invaders — had established Namco as a force in the video arena, simulated batting and skeet-shooting devices were really their forte. Namco's Hideyuki Nokajima describes Pac-Man's genesis:

"People were fed up with space games. So we started to dream up games that would make them laugh. For instance, in Japan, *puck* is the sound you make when you eat something good — like *munch*. We decided to build up a game around that idea instead of shooting. *Puck, puck, puck* instead of *blam, blam, blam*. Everyone was skeptical about Pac-Man because it was the first video game with so much strategy but no fighting, but the more people in the company tried the game, the more they became ad-

dicted. We discovered that the energy dot touched people's inferiority complexes. People like to feel like Superman. This all swayed the negative votes. Nevertheless, there were many who felt Pac-Man would never gain acceptance abroad. They thought it was too typically Japanese. Obviously, that was unfounded."

Namco contacted Midway, who had licensed Galaxian from them, in early 1980. They had a game called "Puck-Man" that they thought Midway might be interested in. The story goes that Bally's new president Robert Mullane was so unimpressed by what he saw that he advised Midway against buying it. "It's silly," Mullane jeered. "Anyway, who plays a maze game?" Fortunately for Bally, shrewder minds prevailed and Midway went ahead with the agreement. But first, there was this little matter concerning the work "puck" which had to be cleared up. "They didn't like how it rhymed with your very popular expletive," Nokajima smiles, "so we changed it to *Pac*."

Pac or puck, the annual gathering at the Amusements and Music Operators Association in November didn't quite get the joke. For them, space was still very much "in" and "anyway, who plays a maze game?" Since only two (Targ and Duel) of the year's Top Twenty videos (as determined by **Play Meter** magazine) were mazes, you could say they had a point.

"People thought that the cute-factor was going to nail us," recalls Midway's marketing director, Stan Jarocki. "But, we had been through this kind of thing before. If you remember, Space Invaders also got the old ho-hum at the 1978 A.M.O.A. From then on we just decided, 'Don't tell me it's bad until the players see the game.' "

Can you honestly say you know someone who has not played Pac-Man? Pinstriped execs steal precious hours from their business lunches to get at a machine. Housewives have been spotted jockeying Pac-Man with one hand and rocking babies with the other. Needless to say, kids have been more than zealous with their support. One bunch I recently ran into doesn't even bother with arcades anymore. Each has his own Apple computer, on which he is learning to program; but, come Saturday, the bedroom converts into a gameroom. The afternoon I joined them, Gobbler and Snoggle, two floppy-disk replicas of Pac-Man, were without question the most requested games of the day.

Can't afford an Apple? Don't despair. There are always the TV systems and their corresponding cartridges: for instance, with Atari's Video Computer System you can play Pac-Man (again, licensed through Namco) at home. Magnavox has K.C. Munchkin available for their Odyssey 2 (Editor's note: The 7th Circuit Court in Chicago recently enjoined Magnavox from manufacturing this cartridge. The judge, petitioned by Atari, concluded that K.C. Munchkin *is* a copy of Pac-Man. Magnavox, who has already lost a bid in the Court of Appeals, is appealing to the Supreme Court.), while Munchie can be plugged into Astrovision's Bally Arcade. Wait, there's more! For really cheap thrills, both Coleco and Tomy have battery-operated, miniaturized Pacsimiles (couldn't resist) and under yet another assumed name is VTech's Crazy Pucker by way of Hong Kong.

" 'It's silly,' Bally's Mullane jeered. 'Anyway, who plays a maze game?' Fortunately for Bally, shrewder minds prevailed."

It should be no surprise to anyone that maze games have begun to inundate the lucrative coin-games business. Just about every major manufacturer has gotten into the act. At the '81 A.M.O.A., we saw Exidy's Mouse Trap (mice, cats, and dogs), Williams' Make Trax (goldfish, birds, and a paintbrush), Stern's Turtles (giant turtles and turtlets), Taito-America's Lock'n'Chase (cops'n'robbers), Centuri's Round Up (so-called "gly-boys" and cowboys), and Nichibutsu's Frisky Tom (mice, a blonde, and a plumber named Tom). As it was, the show's two most exciting variations on the maze theme, Nintendo's Donkey Kong (a damsel, an ape, and a carpenter named Mario) and Sega's Frogger (frogs and logs), both dare players to scale from the bottom of the screen to the top; this really makes the games more like obstacle courses than mazes, since you always know where you're going—up.

Only Atari seemed to make it policy not to take part in this spectacle. Explains their chief coin-op engineer, Lyle Rains: "We had the first maze game with Got'cha (1974) and we've looked at other maze games, but essentially our policy is to produce games that are different from everyone else's. Unfortunately, everything at the A.M.O.A., except for Tempest and Qix, looked like something else. That's very typical in our industry." (To the contrary, at presstime Atari had just announced the release of a maze game named Dig Dug. Created by Namco, it is Atari's first license of a coin-operated game, breaking a decade-long, steadfast in-house R & D policy.)

"There's a trickle-down effect that happens," says Tim Skelly, an independent game designer. "Everyone begins to realize what works and what doesn't. That's why you have so many imitations." Skelly, who is responsible for Cinematronics' Star Castle and Rip-Off, among others, rips the Japanese for being "horrible copiers," but adds, "Most of their games don't cut it here anyway. I foresee them losing a lot of business in the States."

While many of the American companies continue to look toward Japan for licensing deals, there does seem to be a slight turn away from that trend. Even Midway, who owes their fortune (approximately $200 million on Pac-Man sales alone) to Japanese ingenuity, is beginning to bank on its own research and development staff for promising new game ideas. Then there is Taito-America, whose parent company, Taito Corporation, invented Space Invaders: With Qix they have not only one of the strongest games of the '82 season, but an entirely American-made product as well. Says Mittel proudly: "The Japanese had nothing to

(Continued on page 78)

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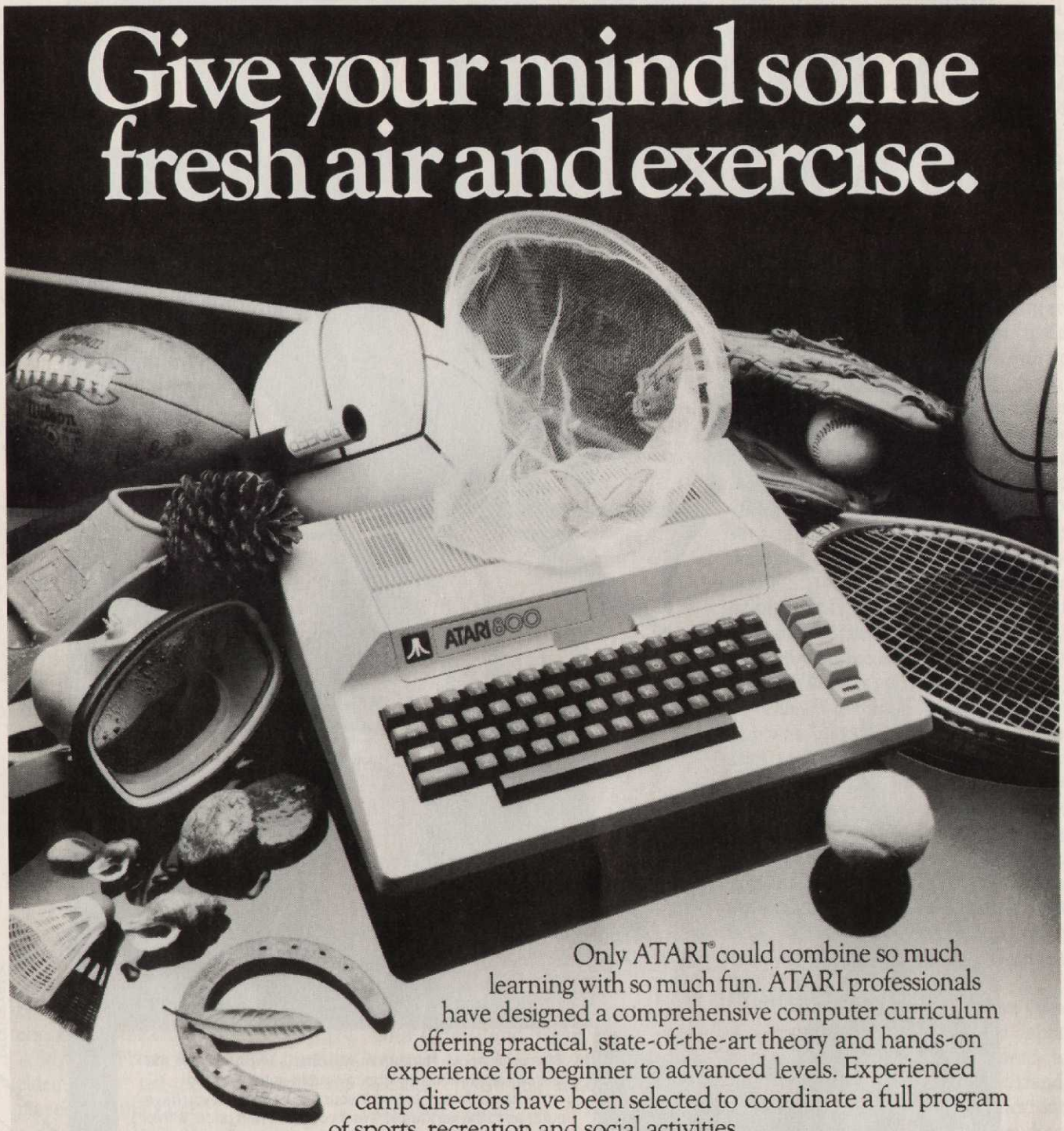

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THEY'VE GOT THEIR ACT-IVISION TOGETHER

(AND ARE TAKING IT TO THE BANK)

By Randi Hacker

Doctors aren't the only ones who have discovered the benefits of specialization. In the video game industry, there are the general practitioners who manufacture both hardware and software and then there are those who mainly concentrate on creating new cartridges. They're software specialists, so to speak.

The leading specialist in the business is Activision. Formed in 1979 by four renegade game designers from Atari and a record company executive, the company was the first to recognize the vast market potential for a software-only manufacturer. Since Atari owns the largest market share for TV-game systems, it was logical for Activision to develop its initial programs to play on Atari's Video Computer System (VCS).

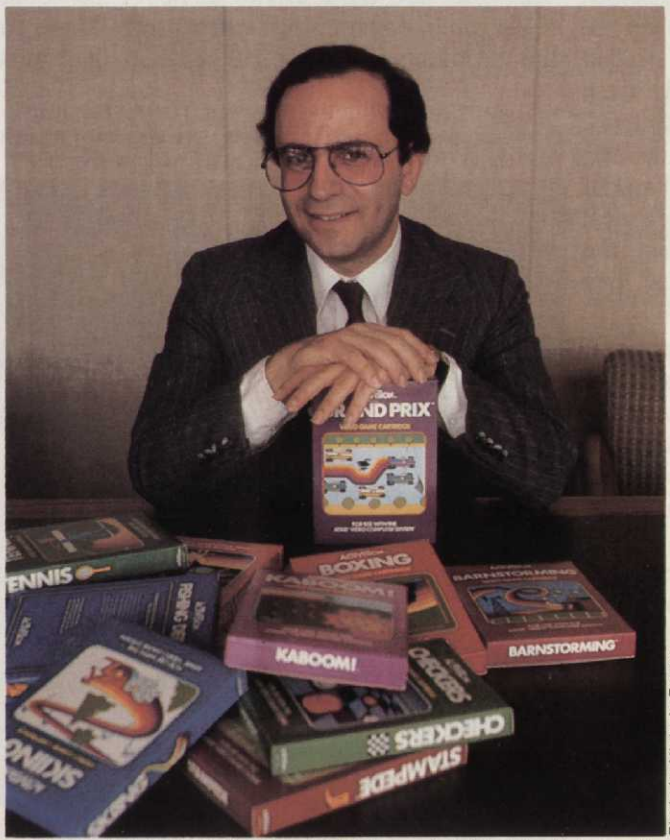


Photo by Victoria Rouse

JIM LEVY AT THE HELM: "I think we electrified the industry."

Activision has very methodically made its presence known, releasing two cartridges each quarter since 1980. Its game library has been hailed by critics as the most diverse and creative in the burgeoning software arena. Considering the technical limitations of the five-year-old VCS. Activision's accomplishments thus far are doubly remarkable.

Unlike many of its rivals, this Santa Clara firm has a distinct aversion to translations of popular arcade games. Despite the trend in this direction, Activision owns no licenses and has no plans to acquire any. All of its games such as Fishing Derby, Laser Blast, Freeway, Skiing and Kaboom! are totally original concepts.

Judging by Activision's growth, it would seem that this policy is sound. Over the past three years, the company has gone from $6 million to over $60 million in sales and increased its number of employees from 22 to almost 100. During this past March alone, they shipped over one million cartridges.

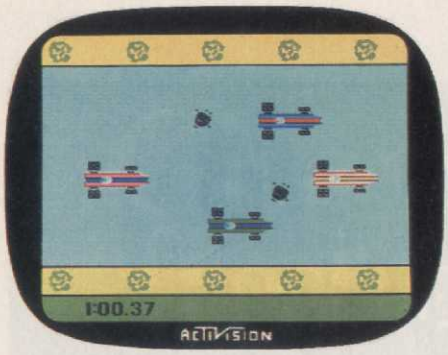
"The lesson in all of this," says VP Tom Lopez, "is that original, creative material is the very best marketing policy."

Activision got its start in the video game industry almost by accident. In 1979, GRT, a Sunnyvale-based record and tape company, was in financial difficulty. Jim Levy, a former GRT executive with an entrepreneural flair, was putting together some capital to buy a division of GRT that he felt could become successful in what was then a very difficult time for the music industry.

While making these plans, Levy received a call from an attorney friend who had been talking to four Atari designers (Al Miller, Dave Crane, Bob Whitehead and Larry Kaplan), who had a wild idea about wanting to leave the company and start up one of their own, devoted solely to designing and producing game cartridges. Their problem was that none had the business experience necessary to run a company. They also needed money. Levy's curiosity got the better of him and he agreed to meet with the group that would soon be respectfully referred to as the "Gang of Four."

Levy knew that the four designers were among the very best at their trade, and he knew the how to sell. With his managerial ability and their creativity, Levy could see a winning combination. Everyone concerned was excited about the possibilities.

Levy returned to his backers and presented a new proposal. He believed that



the home computer software industry was about to explode like the record business had in the '50s. This explosion, he explained, could produce giants in the home video game cartridge business much like those in the record business. The hardware was already in place, he told them. Now, all that was needed were more good-looking, creative game designs for use on the existing systems. Since none of the systems on the market were compatible (they still aren't) they decided to go with the categorical hardware leader, Atari. At least, the Gang of Four would know what they were getting into.

With their investor's blessings and almost a million dollars in startup money, Levy, Crane, Whitehead, Miller and Kaplan founded Activision. Now in their third year of operation, Activision is looking forward to sales of $150 million by next spring.

Boasts Levy, "I think we electrified the industry. We came out of nowhere and took a generational step forward in terms of game design. People point to Intellivision because of the pretty pictures it puts up, but I would stack up most of our cartridges against any of theirs for realism."

"A lot of our games come out nice graphically," adds Lopez. "but it's the playability that keeps people coming back for more. We don't want our games to end up on a shelf."

Probably more than anything else, Dave Crane's games are responsible for Activision's eclectic reputation. His own problem negotiating rush-hour traffic on Chicago's Lake Shore Drive evolved into Freeway, in which a fearless chicken must cross a road to get to the other side. A rather pretty, harmless design for a video aquarium of sorts became a Fishing Derby, a two-man competition that principally involved the evasion of a fish-eating shark. His latest project, Grand Prix didn't even start out as a driving game.

"I began with nothing more than a pretty car," he explains. "I went through a lot trying to figure out how to make that car into a driving game. It really comes down to this—there are a limited number of game concepts so you have to fit your ideas into a category. Grand Prix is actually more of a memorization game than it is a driving game. You have to learn what cars are going to be coming when, so you know how to avoid them. The trick is you have to do it perfectly or else the course will be different every time."

Bob Whitehead, the author of such cartridges as Boxing and Stampede, maintains that certain games are easier to design than others. "Sports games, like Boxing, are nice to do. They're well-defined. I don't have to worry about parameters or inventing something entirely new. I like them because I tend to be lazy. Stampede and Chopper Command were a different story. There was no definition with both, I had to start from scratch by figuring

NOT JUST ANOTHER PRETTY PHOTOGRAPH: Activision's assorted software and merchandising paraphernalia laid out. (Above) Crane's Grand Prix and Whitehead's Stampede. Wondered Whitehead, "Wouldn't it be great to have a cowboy game?"

Photo by Victoria Rouse

Photo by Victoria Rouse

THE GANG OF FIVE: Whitehead, Cartwright, Kaplan, Crane and Miller. Says Crane, "Who knows what a spaceship looks like anyway?"

out how to play and what the graphics should look like."

How Stampede, Activision's first country-and-western video game, came about is indicative of how the design process works. "My parents live in a small farming community," Whitehead explains. "The big annual event there is a stampede. At one point, I thought to myself, 'Wouldn't it be great to have some sort of cowboy game?' I decided that yeah it would be great and got to work on it immediately. For awhile I was waking up in the middle of the night saying 'Hey, this might work!' But then the next morning it wouldn't. The actual design for the game didn't hit me until two or three weeks later. Sometimes games come together all at once in your mind, but other times you have to throw the whole idea out and start all over again."

Like most creative professions, designing video games is both a labor of love and a lot of hard work. First, there's the initial three, four or even as many as six weeks that are devoted to outlining the basic game concept. Then, the designer works with the lab technicians to put together a prototype model.

"At this point, we take pot shots at changing this and that," says Whitehead. "I say I want the cow (in Stampede) to be over there. Someone says it would run a little faster. There are all these small changes that have to be made. This part of the process can take

(Continued on page 80)

Like, Imagic

If you haven't already guessed, there's a software war going on. Since Activision dropped the first bomb, a number of other software-only companies have started up, armed with fresh supplies of video ammo. Bill Grubb's Imagic should become Activision's stiffest competitor.

Grubb, the former president of Atari's consumer entertainment division, has assembled an uncanny mix of ex-Atari and Mattel employees. Dennis Koble, a software manager at Atari and Brian Doherty and James Goldberger, respectively senior project engineer and marketing manager executive at Mattel, form Imagic's braintrust. A host of designers has also been lured out of both camps.

"There are a limited number of top-notch designers in the country," Goldberger points out, "and we feel we have our share of them. That's the key. Designing games is like an art. You can do all the research in the world, but unless you have a flair for it you won't end up with a good picture."

Imagic's debut at last January's Consumer Electronic Show in Las Vegas drew rave notices. Each of their three cartridges on display—Star Voyager, a first-person space game; Demon Attack, a remarkable translation of the dive-bombing aliens arcade theme; and the billiard simulation, Trick Shot—featured high-resolution graphics and challenging gameplay. All can only be plugged into Atari's VCS.

While Imagic established itself before the trade troops at CES, it didn't exactly seperate the chaff from the wheat. This time around, however, at the June CES showcase, will be a different story. Imagic plans to release seven cartridges—four for play on the VCS, three to slip into Mattel's Intellivision. That, my friends, is a first. Goldberger explains:

"We believe its time to start taking advantage of Intellivision. If we feel we have a great concept, we'll design it with Intellivision in mind instead of the VCS. As you know, because of the different hardware capabilities, some games could be excellent for Intellivision, but not for the VCS. Some, though, will be available for both systems."

Regarding future game trends, Goldberger suspects a move into fantasy role-playing on the order of films such as **Excalibur, Dragonslayer** and **Clash of the Titans.** Better yet, how about a video version of O. Henry's short story, **The Gift of the Imagi?**

—R.H.

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By Steve Bloom
(Editor of *Video Games Magazine*)

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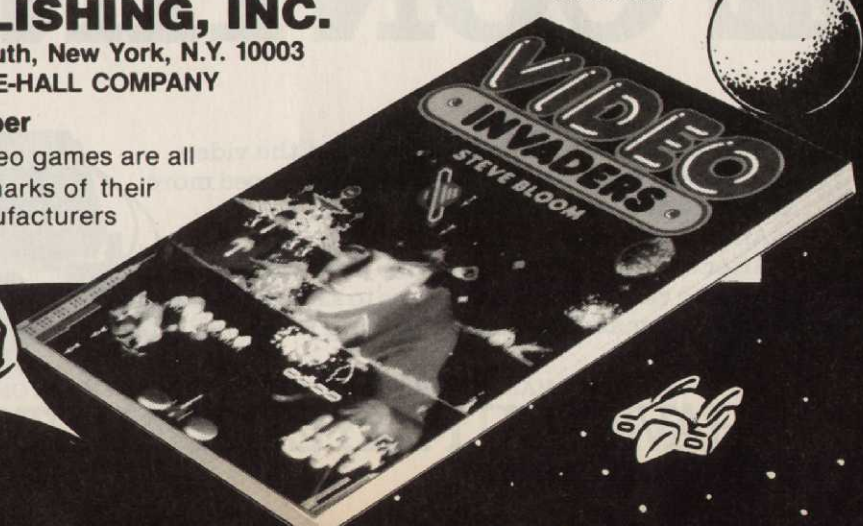
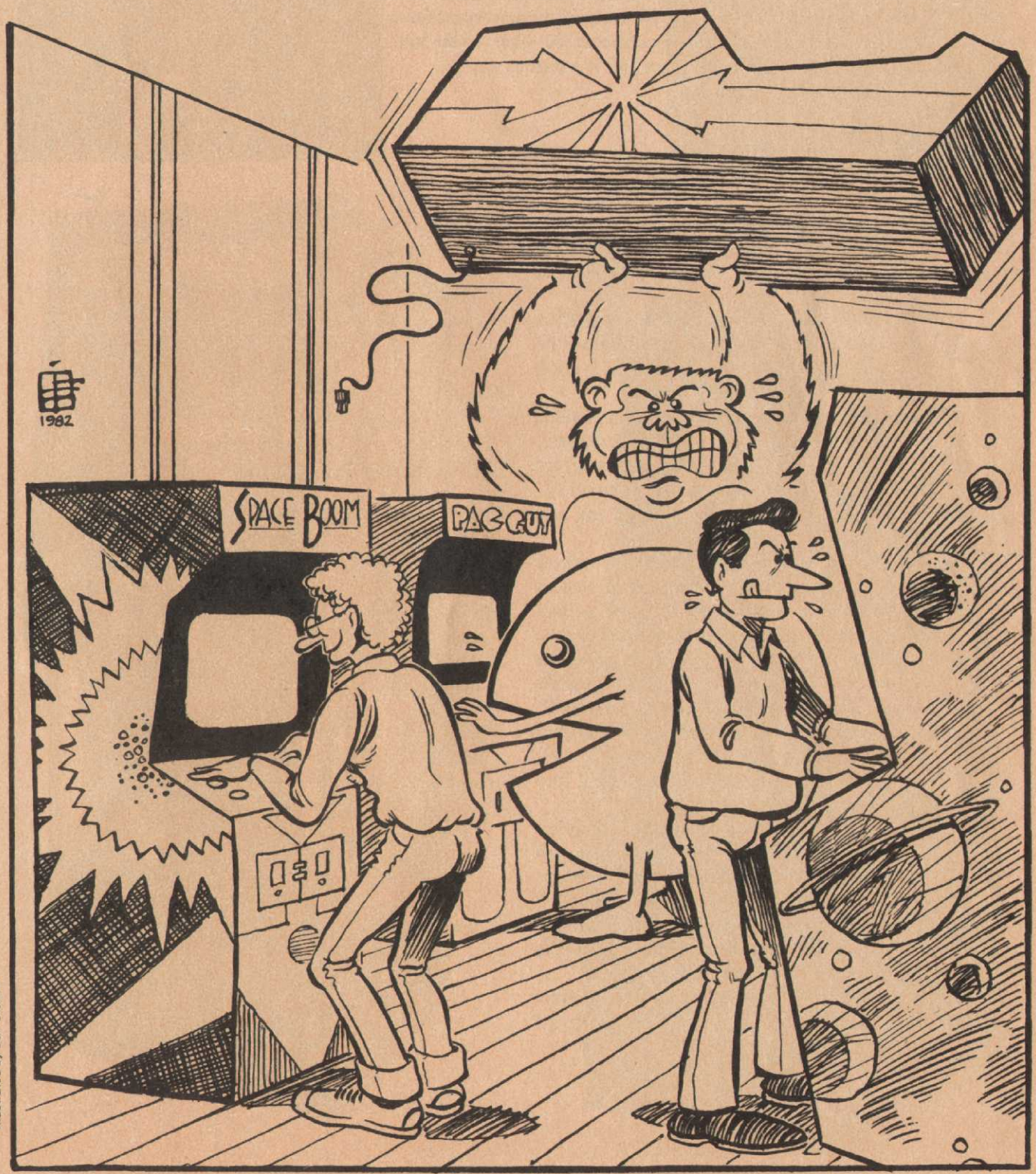


BEATING THE GAMES

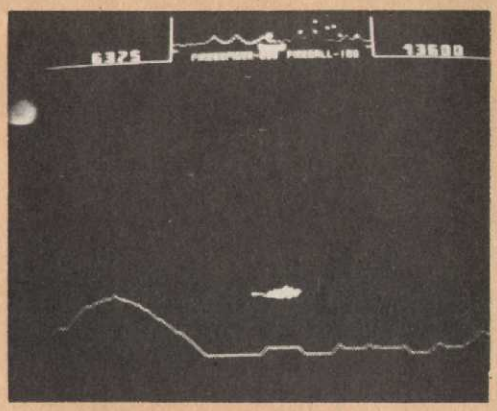
How to Play 15 of the Most Popular Videos



Illustrated by Dan Steffan

STARGATE

To play Stargate you have to know Defender, so let's backtrack a minute. In Defender, you patrol a planet that is being invaded by six different aliens—the lander, mutant, baiter, bomber, pod and swarmer. Essentially, the object is to prevent the landers from swiping your ten little men (known to gamers as "humanoids") and turning them into mutants. When this does occur you suddenly face a final, next-to-insurmountable duel with a crowd of crackerjack foes. Stargate has more enemies, but the same controls—get the six buttons and joystick down first and then give it a serious go.

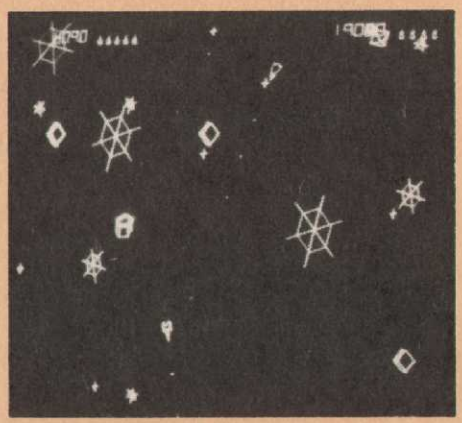


Tips

1. Like with Defender, keep an eye on the scanner. This is especially helpful for detecting when your men are being whisked away.
2. When a lander steals a humanoid, kill the lander, then rescue the man before he crashes back on the planet. This is good for 1,000 points.
3. Mutants are what becomes of humanoids when they're successfully abducted. Since they will track you incessantly, try to confuse them by reversing. Disoriented, now line them up and nail 'em.
4. You have three smart bombs. Save them for the pods and swarmers. You earn an additional bomb for every 10,000 points.
5. If you'd rather not bother with all of this, skip the first wave by slipping into the Stargate, the box-shaped figure that sits in the atmosphere. You'll be "warped" to a spot where landers are busily accumulating your men. Collect four and escape back into the Stargate. You'll find yourself next in wave four.
6. The fifth wave is called the "Yllabian Dogfight." This is where you will need to use your "anti-inviso cloaking device," which simply is an invisible shield that's activated by a simple press of the button. If you survive this battle you return to the planet with a fresh supply of men.
7. After every wave you receive this bonus: The number of men left X the number of waves completed X 100.

SPACE DUEL

Some are already calling Space Duel the real Asteroids Deluxe. Like in Asteroids, the attacking forms break into halves twice before they are finally eliminated and there are UFOs to contend with; but, unlike in Asteroids, Space Duel is color and features a tremendous variety of geometric adversaries. Plus, you are given the opportunity to either play by yourself, cooperatively with a friend or versus each other. By joining two ships you become a "space station" which can be both to your advantage and disadvantage.



Tips

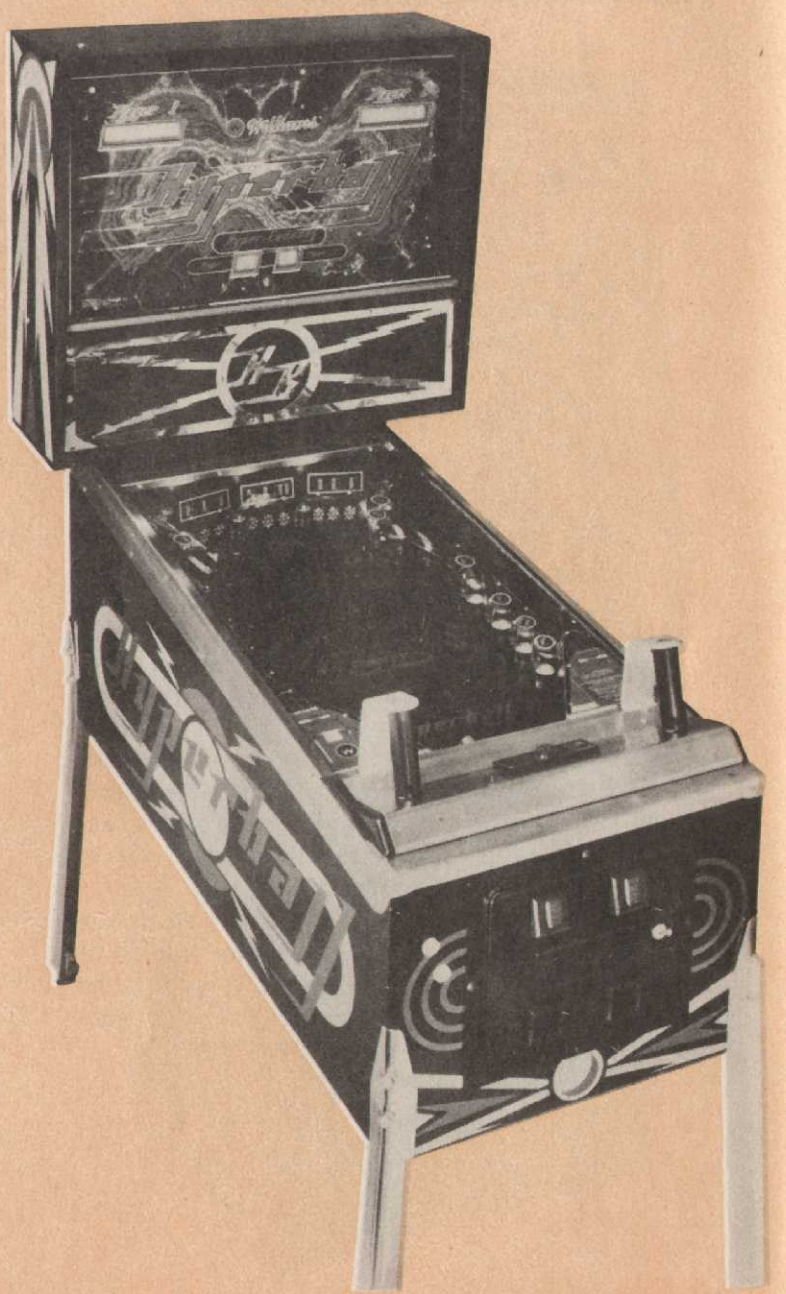
1. Mines are tiny crosses that have to be shot seven times before they disappear. Each shot changes its color and repels it.
2. After all the objects are cleared, the "onslaught wave" begins. For about seven seconds you can shoot for stars and fuzzballs for extra points.
3. Aside from shooting, the shield (which activates by pressing the button) is your best defense. It protects you from collisions and saucer fire, but diminishes with use.
4. When playing against a friend you can shoot their ship for 500 points. The victim does not, however, lose a life.
5. A ship is not out of commission until a second hit upon it. You can continue to play, though with decreased firepower and mobility. In two-player competitive, a damaged ship functions until the game is entirely over.
6. Using the space station means both players must work together. The second hit on either ship will cause both to explode. This forces the stronger ship to protect the weaker one.
7. When one player plays the space station he is awarded four times the amount of shield power. This probably is due to the fact that oftentimes you feel out of control. Try not to spin too much.

HYPERBALL

Hyperball is Tempest locked inside a pinball cabinet. The controls—two trigger mechanisms and a red "Z-Bomb" button all found on the front of the machine—are distinctly video-oriented. There are no flippers. The object is to prevent lightning bolts from attacking your "Energy Center" by repelling them with metal balls (which are activated by your guns) as quickly as possible. Ten blows to the center and you're dead.

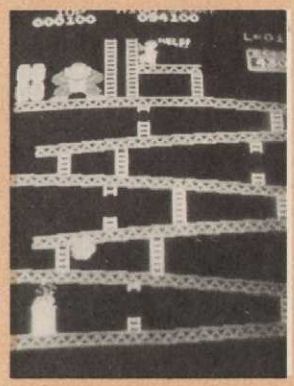
Tips

1. Try your best to follow the bolts, which begin at the top of the playfield in the form of pinball-like targets. Once a certain sequence of these targets (each is marked by a letter) are lit, they begin cascading down towards the EC. Shoot to kill.
2. Beware of the baiter! Disguised as a bolt, it wreaks havoc wherever it goes. Firstly, you know it's a baiter because it flashes; secondly, it can dodge your shots by skipping along the nine lighting lanes that lead to the EC. One hit by a baiter on the EC drains all the remaining energy. Good-bye.
3. Like in Defender and Tempest, this Z-Bomb erases all the enemies on the field at once. You only have three, so save them, preferably for the baiters.
4. Points are accumulated by hitting lit targets and bolts. Claiming 30 bolts completes a wave at which bolt you receive this bonus: Energy units left (remember, you start with ten) x 1,000.
5. For more points, read the instructions on the message board (such as "HIT Y—14,000" or "*SPELL* 3-E.U. ENERGY"), then aim and fire. When spelling, the trick is to do it in sequence. If the wave ends, you can continue this task during the next one. Bonuses for such marksmanship include additional bombs, energy units and points.
6. The fifth wave, called the "Special Reflex Wave," is a shootout. Once a random target lights up, the sooner you tag it the more bonus points (which are rapidly decreasing on the message board) you earn. Failure to hit any of the first five ends the wave. There are 20 targets total.
7. After 400,000 points you are rewarded with a new energy center (five units) and a fresh supply of bombs.



DONKEY KONG

Donkey Kong is one of the great adolescent fantasies gone video. An innocent woman is carried off by a mad beast and held captive against her will while her beloved hero (in this case, Mario the Carpenter) tries to come to her rescue. It's King Kong-time, boys and girls. There are for different game boards in Donkey Kong, a joystick and a "jump" button. As of this writing, it's the Number One video fetish—for the last six months and still counting.



Tips

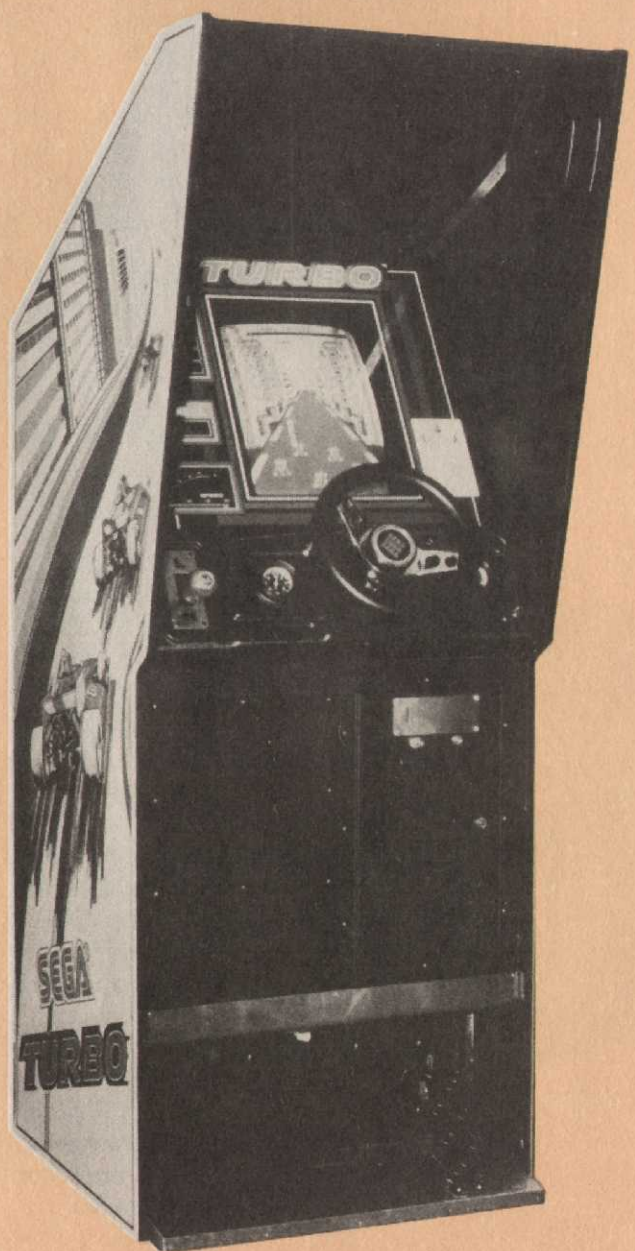
1. On three of the four boards you (Mario) are provided with the only weapon you're gonna get except for your smarts. Use the hammers, which you must jump for and only give momentary superpowers, to destroy the barrels and fireballs the crazy ape is hurling down the various structures. But hammering prevents you from doing practically anything else, like jumping.
2. On the first screen, which consists of six red girders,speed and finesse are essential. Sprint for a ladder as soon as you can move. Run across the second girder to the middle ladder , climb it and wait for the barrels to go by. Grab a hammer and knock off a load of barrels, wait for the right moment and go for the girl.
3. The second (blue) screen has two things that you have to attend to: First, Mario's girl has left a number of her personal belongings behind. Everything that you can pick up—like her umbrella and valise—is worth points. Also, there are two short girder sections on each level that disappear as you step across them. You do have to jump over the holes or he'll end up landing on his head.
4. The fourth (elevator) screen has no hammers, lots of bouncing bombs and causes plenty of problems. This board is a panic from beginning to end. The only way to hop on a lift is to be at the exact same height it is. Then jump.
5. The sixth (factory) screen, with its conveyer belts and center-mounted fire barrel, wouldn't be all that hard if the ladders would just sit still. Here again, Mario has lots of stuff to pick up, some hammers to use and a girl to rescue.

TURBO

Turbo is yet another variation on the driving theme that has been around for over a decade. Like Monaco before it, Turbo consists of an aerodynamic cockpit (in the deluxe version), a 2-speed stick shift, illuminated oil and temperature gauges and a full-power accelerator. Its immense charm and success, however, are due to the breathtaking, color graphics. Your Turbo races through a constantly changing scene—from city streets, to an oceanview freeway, over narrow suspension bridges and through blind tunnels. Points are accumulated as you successfully negotiate each route while lapping other cars. Drivers can monitor their progress by glancing up to the top of the screen where there are read outs for time remaining and the number of cars passed.

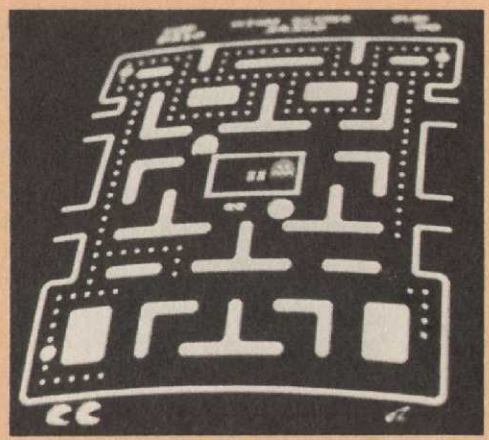
Tips

1. Shift quickly into high gear to reach maximum speed.
2. Getting through the first lap without a collision is imperative for a successful run otherwise you're sent back to the beginning (like in Scramble). Reduce your speed to avoid collisons and restarts.
3. Try to stay in the middle of the road. This affords you a maximum advantage when eluding obstacles on your right and left sides and minimizes collisions with the guard rails.
4. Anticipation, as well as lightning reflexes, is the key to a successful run. Watch for the obstacles as they appear initially as small specks and prepare to take evasive action.
5. Don't have a lead foot. Easing off the accelerator at times will result in less collisions and a better run.
6. An extended play bonus is awarded when the driver passes sufficient cars with time to spare. Lapping cars during this phase is another source of points.



MS. PAC-MAN

Ms. Pac-Man is the *femme fatale* of the arcades. This lovely lipsticked lady is Midway's follow-up to that most successful game of nearly the same name. She's already hooked all those obsessive gamers who know the originals' patterns by heart; she's probably breaking their hearts as well. Ms. Pac-Man has changing mazes, wandering bonuses and smarter ghosts than ever.

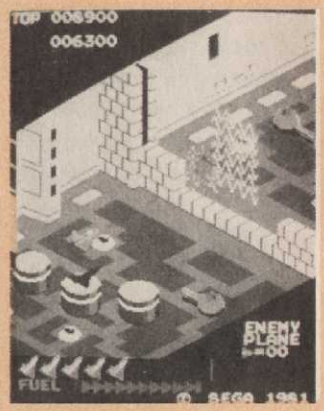


Tips

1. There are four mazes. The first two boards use the first maze; boards 3, 4, and 5 the second; 6 through 9 the third; and maze four appears for board 10. Learn them—it's just about the only weapon you have.
2. The first board is an easy one, but there is one spot where you can easily be trapped —the C-shaped area in-between the two top power capsules. Don't go in there if any ghosts are in the area.
3. Maze number two is the toughest. Two of the tunnels are stuck all the way up at the top where they're almost useless and there are two more dangerous bends starting right below the top power capsules and running all the way down to the lower escape hatches. Beware!
4. The fruit bonuses—cherries, oranges, pretzels, etc.—don't sit still. In fact, they get in the way more often than not. Go for them, but not at the cost of a life.
5. Keeping on the move and trying to confuse the ghosts are, of course, the best strategies. Like in Pac-Man, when you're in the tunnels the machine can't quite figure out where you are, so take advantage of this whenever you can.
6. Don't depend on patterns. These ghosts aren't as predictable as the last ones. They do, however, run scared when you gobble up a "power dot" like in Pac-Man. And your momentary burst of energy does decrease as the rounds go on (except for the sixth).

ZAXXON

Zaxxon, as of this writing, is being hailed as the state-of-the-art coin-op game in terms of both graphics and sound effects. In reality, it's a souped-up, three-dimensional Scramble; curiously, for all its fanfare you have less firepower than in either Scramble or Super Cobra (you're only armed with horizontal-firing lasers). Aside from the pretty pictures and deafening explosions, Zaxxon impresses with its unusual depth perspective. Flying in Zaxxon is like skiing; at first it seems impossible, but invariably gets easier.

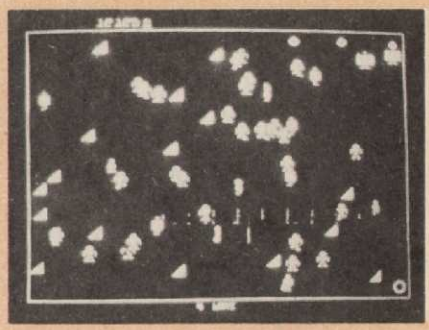


Tips

1. Use your gunfire to judge altitude when passing over walls and encountering enemy spaceship squadrons.
2. Stay low: There's a tendency to want to cruise at a high altitude, but laying low and maintaining a straight course will actually improve your chances of avoiding enemy missiles and destroying fuel tanks.
3. Cruise missiles have homing devices and since it takes 6 shots to destroy them, they'll usually get you first. Only by quickly changing altitude can you elude them.
4. When passing through electrified fences fly as low as possible without striking the wall. There are always openings there.
5. To defeat the attack squadron in deep space, you must be at the same altitude as the ship you're battling with.
6. When facing Zaxxon the robot in the second "Flying Fortress" phase, be prepared to defend yourself against his lethal homing missiles. To do this, line up directly across from where the missile takes off. This anticipation will give you enough time to get off the six shots necessary to destroy them. You cannot outmaneuver it. By the way, you can't kill Zaxxon, only repel it.
7. Always keep an eye on your fuel gauge and strafe the tanks whenever they come into view. There are not tanks in space so make sure you fuel up.
8. Of the two firing mechanisms—the trigger on the stick and a button—the button seems to work more effectively. Though it's not rapid-fire, steady pressing serves very much the same purpose.

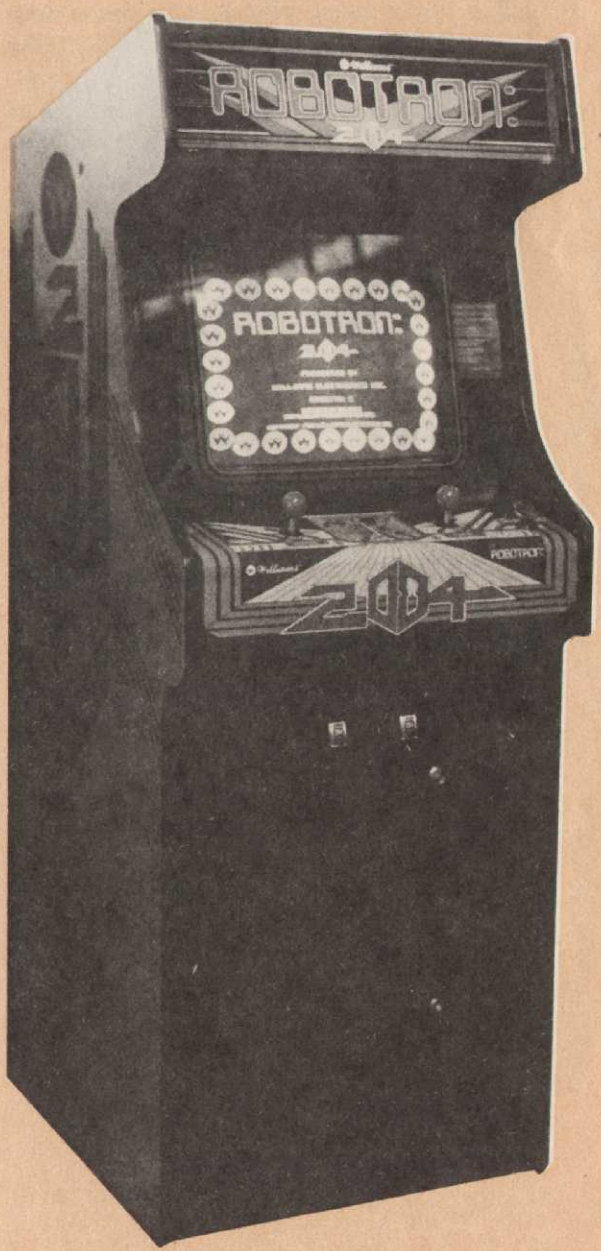
ROBOTRON

Robotron is a nightmarish sci-fi thriller played out on a video screen. The apocalyptic plot and object of the game is to destroy the various sinister robots who have already wiped out all of humanity except for you and your electronic family (father, mother and baby brother). To prevent from becoming their final victims you must—what else?—blow them away. Two eight-directional joysticks—for firing and moving about—are your only weapons. Robotron is the illegitimate offspring of Berzerk and Defender.



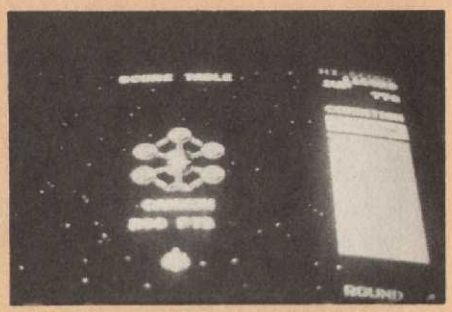
Tips

1. Move as quickly as you can away from the robots, while simultaneously firing at them. Remember your laser gun has unlimited range and firepower.
2. Get used to moving and firing at the same time. Mastering this technique is the only way you can succeed at Robotron.
3. For extra points gather up as many family members as you can before moving on to the next wave. In addition, one life is awarded for every 25,000 points accumulated.
4. In later rounds, go for the red spheroids (1,000 points each) immediately. If you take too long, they'll send out deadly "enforcer embryos," whose appearance sharply decreases your chances for survival.
5. Hulk robots (the largest) cannot be destroyed. You can, however, repel them with fire. They are more obstacles than anything else.
6. Tank robots will try to kill you by firing rebounding shells. Destroy them for 300 points, their shells for 50.
7. Brain robots, the most dangerous and clever of all, appear every fifth wave. They must be dealt with swiftly. The length of their survival is inversely proportional to yours. They are capable of launching deadly homing missiles and also are possessed with the insidious power to program members of your family into deadly progs, a robot who will do only as the "brains" command. A brain is worth 500 points, its missiles 75 and progs goes for 100.



BOSCONIAN

Bosconian is another treat for Galaxian fans. It may not break ground insofar as graphics, sounds, weaponry, and antagonists are concerned, but you are supplied with a terrific eight-way joystick that has great manueverability and the chance to attack space bases for 1,500 points each. Bonus rounds are awarded for the first 20,000 points and every 70,000 thereafter.

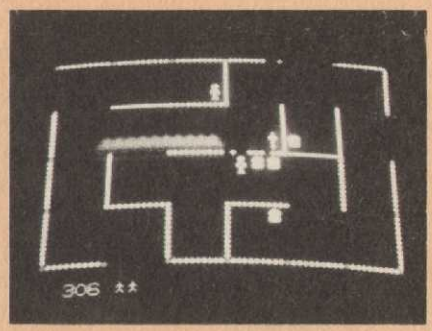


Tips

1. In Bosconian, your ship has tremendous firing capability with ammo emitting from both the front and rear. It's a pleasure not having to turn your ship 180 degrees everytime you're being attacked from behind.
2. Your toughest task is eliminating groups of enemy squadrons flying in close formation. Since evading them is very difficult, use the classic strategy—the best defense is a good offense. Go for the center ships first. This will split the squadron up and minimize the chance of you colliding with it.
3. Make attacking the enemy base your number one priority. It takes six blows—one for each of its protruding bulbs—to erase the base from the galaxy. The more bases you can destroy, the quicker you'll reach the bonus rounds.
4. Use the radar screen to note where the bases are hiding.
5. Bosconian's joystick is very sensitive. It requires a light touch to get the most out of it. Quick, short pulls of the stick is the best technique.

FRENZY

Will the real Berzerk Deluxe please stand up? Actually, Frenzy was created by Berzerk's designer, but with Robotron also in the arcades it's hard to tell which came first. Frenzy has some neat tricks up its sleeve, though. The maze walls are different, the robots have gone through a change of face and Otto, that irrepressible bouncing ball with a smile on his mug, is no longer a mystery. Otto can and will be had.

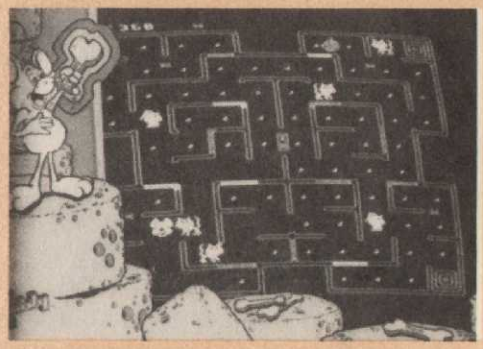


Tips

1. Of the two kinds of robots, the ones that look like skeletons are smarter. Since they're skinnier than their chubby cousins, they're harder to hit. But that's not all—they like to dodge your bullets, too.
2. At the end of each round you receive this bonus: ten X the number of robots that started on the screen. There can be as many as 25.
3. Towards the end of each round, Otto will appear. Use him to your advantage by having him clobber some of the robots you missed. Since he'll follow wherever you go, simply line him up with a robot and bam!
4. Otto enters from the same location where you started the round. You can shoot him with three well-timed shots, but be careful—he comes right back at you from the same direction, only faster. Sit right by an exit and try to pick him off again. If it doesn't look good, duck out. Better safe than . . . well, you know.
5. Probably more treacherous than Otto in Frenzy are the solid white ricochet walls. Any shot that hits one of them will immediately bounce right back. Be careful not to take more shots than necessary at a robot that's standing in front of a white wall. More deaths happen when the first shot takes out the robot and the second caroms back and tags you.
6. The purple corrugated walls can be chopped away with one shot per segment like in Centipede. Shoot at the wall, break it open and go for robots on the other side. They, by the way, can do the same thing to you.
7. It's advisable to carve paths and exits in purple walls, especially when being chased by Otto. This is full of suspense. Otto's on his way and you have one more chunk to shoot and you keep missing. Don't panic.

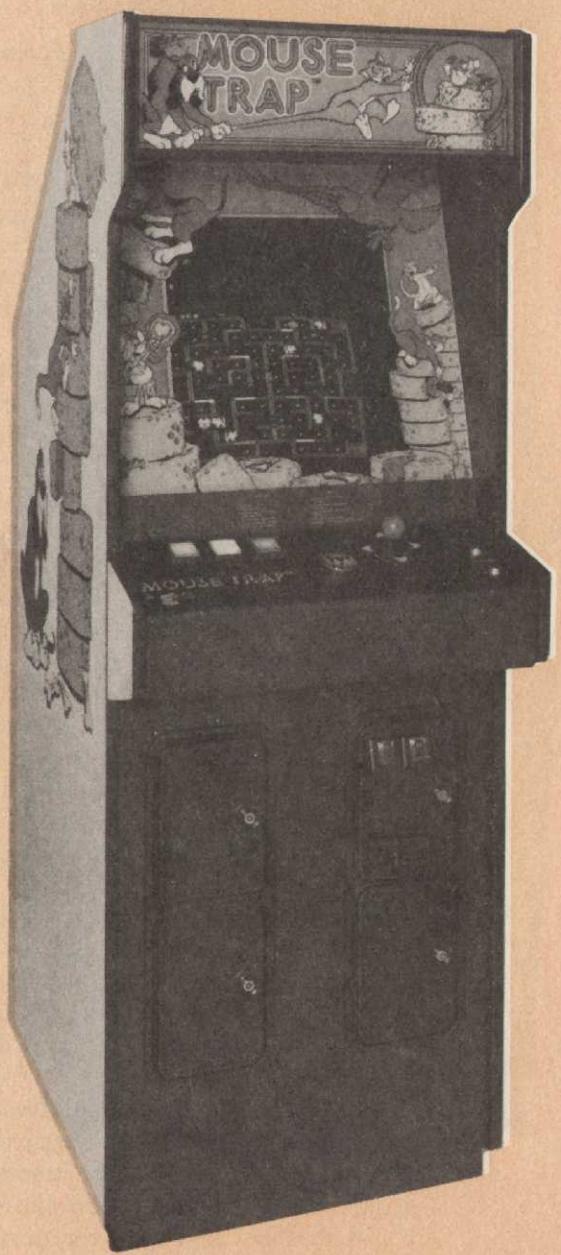
MOUSETRAP

Mousetrap is arguably the best maze game to follow the Pac-craze. It's about dogs and cats, cheese, bones and paper clips, and a purple hawk, too. See, you're a mouse who happens to like eating dog bones. That's because when you eat a bone—and press the oversized green button right next to the joystick—you become a dog. That's when you go after the cats. But watch out for the hawk. It'll get you unless you make it "stupid." Another fun thing you can do is play around with the three doors, which are signified by red, yellow and blue buttons to the left of the stick on the control panel.



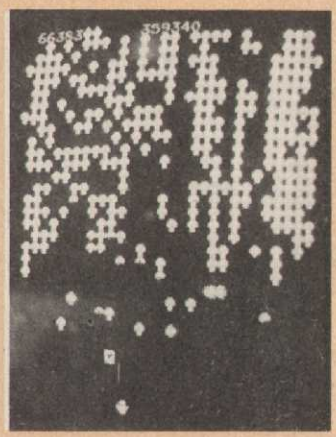
Tips

1. Like in Pac-Man, save the power boosts —in this case bones—for last. In the meantime, gobble up the dots of cheese in the maze while avoiding the cats. They are not as smart as the ghosts in Pac-Man; however, there are more of them. When you do swallow a bone you must press the dog button immediately. For the first few plays you'll probably forget. Don't make a habit of it. Now, go for as many cats as possible. You'll know a cat's been had by its horrendous cry. When you become a mouse again you've lost your powers.
2. Use the doors to evade cats. Press yellow, for instance, when you near a yellow door. It'll swing open with a thud. The doors can be fun to play with. Don't overuse them.
3. Make sure you don't lock yourself out of the center area where the box marked "IN" is. IN is your only defense against the hawk. By running into the IN box you confuse it. Suddenly you've been sent arbitrarily to one of the four corners where you'll be safe from attack for a few seconds. But don't stay there too long. The cats can get you.
4. Another use for IN is to move quickly from the center to a corner where the bones are located. Unfortunately, you can't tell the exact shot.
5. The best way to use the door buttons is to memorize them like the three fire buttons in Missile Command. Place your three middle fingers on the appropriate buttons and do the best you can.



CENTIPEDE

Centipede is one of the few games programmed by a woman, and even though it's not *just* for those of the female persuasion an awful lot of ladies are hooked on it. Its simple controls—a single rapid-fire button and a Trak Ball—are a real relief after a long bout with a Defender multi-button console. And killing bugs—the inimical centipede, the high-speed spider, the diving flea and the cancer-spreading scorpion—doesn't seem to bother even the most pacifistic players.

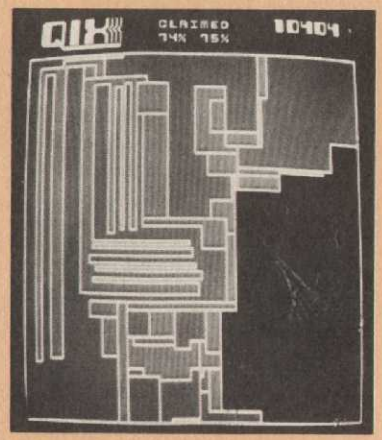


Tips

1. The first thing you have to do is carve some shooting space out of the mushroom patch above your shooter. Don't clear all the mushrooms out of the bottom part of the screen unless you don't mind fleas (starting in the second round) falling in your direction and refilling the screen with mushrooms. Fleas descend whenever there are fewer than five mushrooms in the shooter's area.
2. When you're clearing mushrooms keep your shooter as high as possible. The more mushrooms you wipe out the faster you can get to the centipede. Go for its head (the one with the eyes) preferably; split it up and you're asking for trouble. But since this is going to happen anyway, learn to aim as accurately as possible for all the independent segments that invariably will be streaking around the screen. A head, by the way, goes for 100 points.
3. Spiders show up at random intervals, bounding out of the bottom edges of the screen and causing all kinds of havoc. They grasshop side to side and never backtrack. If you want to work close to the side, wait for the spider to emerge and then move behind it.
4. Spiders are worth either 300, 600, or 900 points, depending on how close to your shooter they are when you hit them. Be prepared to lose a few shooters until you get your timing down.
5. When the scorpion comes out, be sure to note where it leaves its trail of poison mushrooms. Once the centipede hits one of these infected fungi, it'll come diving down. If you can get right underneath it and hold the fire button down, you have yourself a fast and easy passel of points.

QIX

There's nothing like Qix anywhere in the arcades (except for maybe Amidar). The object is to trap the Qix—a multi-colored helix—in a quarter or less of the screen while avoiding it and its electronic buddies, the sparx and the fuse, both of whom travel along the lines you've just drawn. Draw either fast or slow lines with the buttons and sneak around the screen using the joystick.

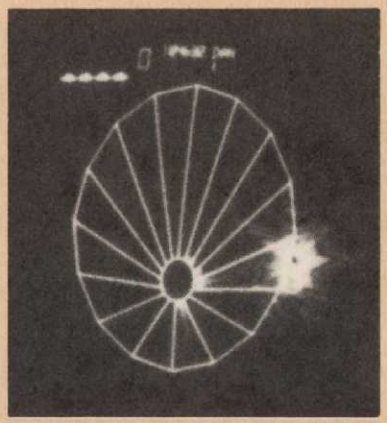


Tips

1. Once you've boxed off an area, the Qix can't cross it. This is not so easy to do, but (corners are good for this) you'll give yourself some time to fill in the rest of the screen.
2. Since you earn more than twice the points for drawing a box with the "Slow Draw" button, try to set up a pattern that will allow you to fill in a large area by safely laying down a short, slow line. Boxing off an area with small, vertical "Fast Draw" boxes that you connect with a single slow draw line will enable you to do just that.
3. You get 1,000 bonus points for every portion of the board you fill in over 75 percent. What you want to do, therefore, is fill in as much of the screen as possible on your last move, leaping from, say, 65 to 85 percent. Your bonus: 10,000 quick Qix points.
4. Watch out for the "Spiral Death Trap. This can only happen when you're clumsy enough to box yourself in.
5. You can fool a spark, which traces along your lines, just like a ghost in Pac-Man. Wait for one to trail right behind you, then close the box. It'll re-trace the box for no particular reason.
6. Fuses enter the picture when you take too long to complete a box. It takes advantage when you release the draw button or lose concentration.

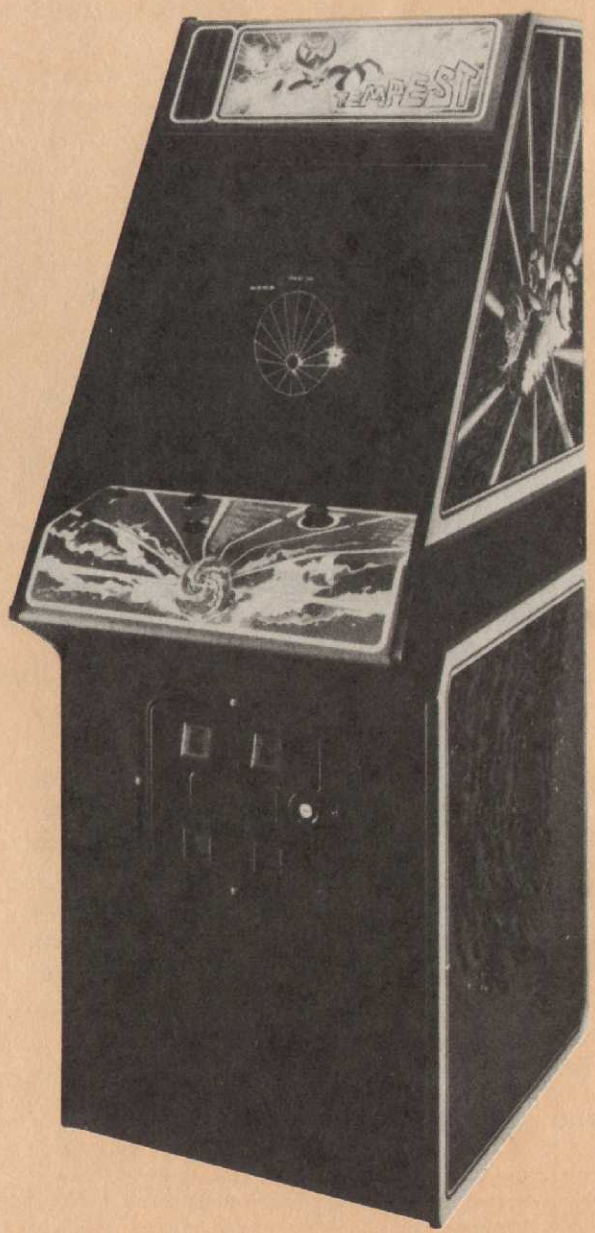
TEMPEST

Tempest was Atari's first color QuadraScan game. It's clean, high-speed geometric boards are something entirely new to video gaming. Keeping your horseshoe-shaped shooter alive means that you'll have to dodge a host of menaces; survive long enough and you zoom through space to the next level (there are 99). Winning at Tempest requires a light touch, incredible calm and great reflexes.



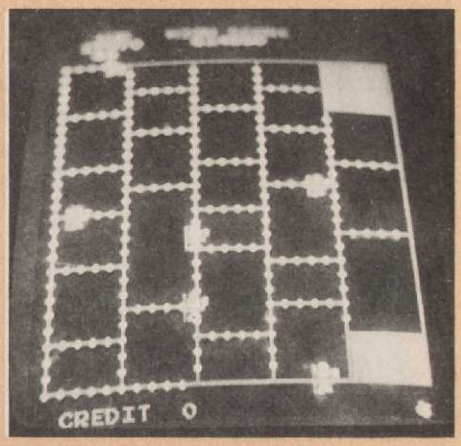
Tips

1. Tempest's controls are simple— a spinning dial and two buttons. One rapid fires, the other superzaps. The latter clears the screen of all foes once each level. Use it wisely.
2. On the first few levels, superzap flippers (red) that threaten you on the rim. Also, learn to wipe out flippers by waiting for them in one spot, then at the exact moment they "flip" onto you, tap the fire button.
3. Level three is when the real action begins. Tankers (blue) containing two flippers appear. Shoot for tankers as soon as they do.
4. Spikers and spikes (both green) also show up for the first time. From this point on, always be sure to have at least one lane clear of spikes so that when it's time to blow through space to the next phase you don't get skewered.
5. Contrary to what you may think, the round is over as soon as the last alien lands on the rim.
6. At level nine, spikes crowd every lane; again, make sure you clear one or two out. Do this with rapid-fire.
7. At level 11, the dreaded, but cute-looking fuseball joins the fun. Don't let it climb onto the rim, whatever you do. If it does, either superzap or spin the knob with all your might. To your surprise, you might sneak by it.
8. Use the skill-step option to your advantage. If you've improved to, say, the ninth level, then start there next game. Why waste energy and eyesight (and probably lives) on the easier levels? This is a true innovation.



AMIDAR

Amidar combines the gameplay of Pac-Man and features from Qix and Make Trax. Either you're a gorilla or a little man with a paint roller and your job is to capture all the rectangular boxes inside the maze by tracing lines around them all the while slipping by the so-called "amidars." There's a joystick and a jump button, which you can use four times each round to pass under your pursuers. Amidar's simple to play, harder to master and cute as a button.



Tips

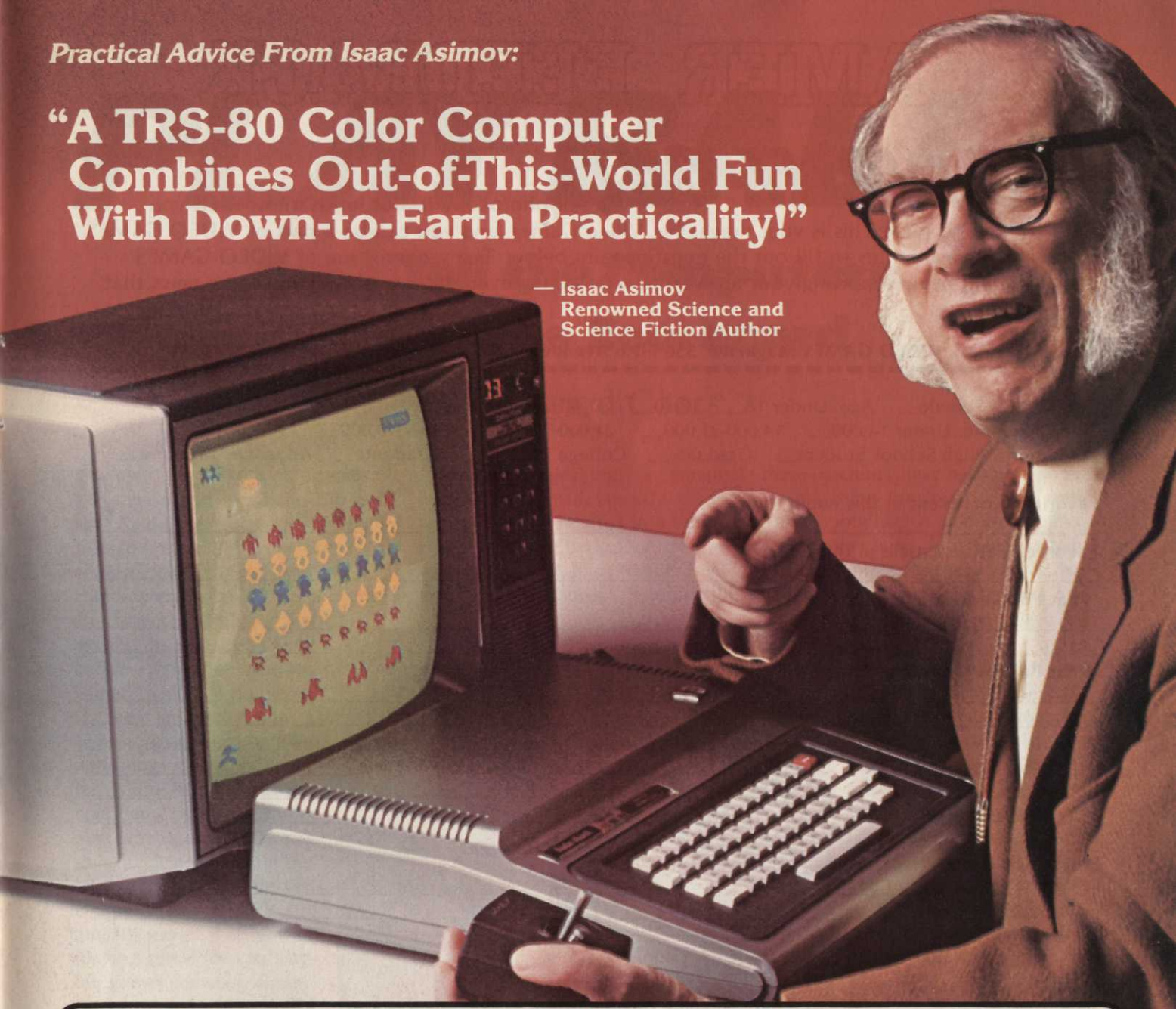
1. The best way to avoid being caught by the amidars is to wait until all four converge on you, then race to the other end of the maze.
2. Since the amidars must turn at intersections, use this to your advantage by remaining on a straightaway in order to avoid them.
3. When all the corner boxes are filled in, you are given ten seconds to corral amidars for as many as 1,600 points. It's like gobbling a power cap in Pac-Man. Make sure you grab the corners before you finish the maze—otherwise, you'll blow your chance for points and, more importantly, revenge.
4. In the bonus rounds between the gorilla and painter screens, carefully time the release of the jump button. Believe it or not, you can get the 5,000 point bonus fruit that sits at the bottom of the screen.
5. During the paint or "even" round, race the roller around the middle squares first. You'll collect more territory faster and have an easier time evading the pesky amidars.
6. Realize that, unlike in the gorilla or "odd" round, you can only capture a section adjoining one that has already been painted in.
7. Use your jumps judiciously. And when you do jump, make sure to pass underneath pronto. A moment's hesitation might mean a life.

BEATING THE GAMES pull-out written by Perry Greenberg, Bob Mecoy and Steve Bloom. Photos by Perry Greenberg. Cover Illustration by Dan Steffan. Special thanks to the Station Break arcade in New York City for allowing us to photograph on the premises.

Practical Advice From Isaac Asimov:

"A TRS-80 Color Computer Combines Out-of-This-World Fun With Down-to-Earth Practicality!"

— Isaac Asimov
Renowned Science and
Science Fiction Author



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Please return to: **VIDEO GAMES Magazine, 350 Fifth Avenue, Room 6204, New York, New York 10118**

Sex: Male__ Female__ Age: Under 18__ 18-30__ 31-40__ Over 40__
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Favorite Department in this issue:

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Favorite Feature Article in this issue:

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What I'd like to see less of:

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Favorite form of play:
__Coin-op Games
__TV Cartridges
__Computer Games

Favorite Arcade Games:
_____
_____
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Favorite T.V. Cartridges:
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Biggest Rip-offs:
TV Cartridges:_____
Arcade Games:_____

Have you finally had enough PAC-MAN? __yes __no

Views on ATARI's million dollar baby - the new home version of PAC-MAN:_____

_____

Choose a George Plimpton type spokesperson (either two or three dimensional) for ATARI's video console (NO WRITE-INS PLEASE):
__Alan Alda __John Houseman __Orson Welles __George Burns __Charo

Favorite video game characters:_____

_____

_____

Video Games' "Hit Parade"—pick the games with the best musical score:_____

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_____

Great ideas and/or concepts for new games:_____

_____

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Thanks for the time and interest, and we'll be seeing you next issue.

PLAY BALL!

Can't Tell the Computers Without a Scorecard

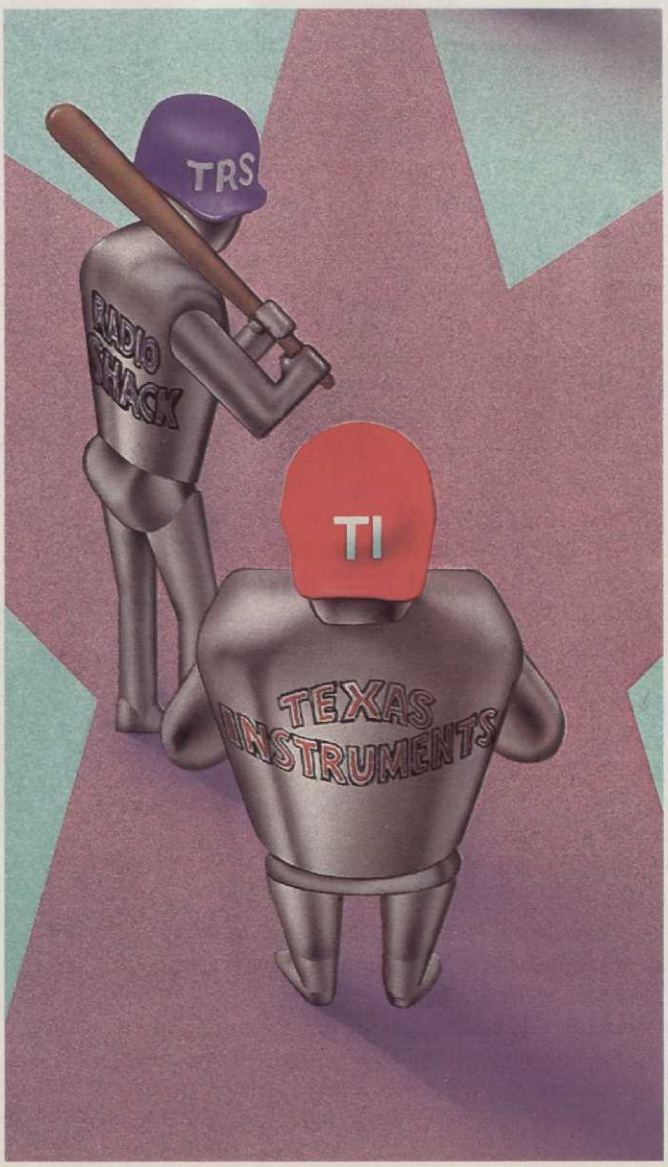
By Howard Coors

Buy a computer to play games. It may sound ridiculous but is it? As the price of home computers falls to below $150 while the cost of sophisticated TV-games systems is climbing above this figure, consumers are presented with an interesting, but complicated choice. What is a video gamer to do? Well, he or she can either purchase a high-quality, graphically-appealing games console (ie, Mattel's Intellevision), confident that stimulating new cartridges will continue to be made available, or opt to invest in a full-fledged computer (ie, Atari's 400 and 800 models), capable of playing scores of challenging games (or even designing new ones) and powerful enough to handle home and small business applications as well.

Since most gamers' knowledge of computers is cursory at best, this article will attempt to serve two purposes. First, it will answer the most fundamental questions about small computers' functions and capacities. Second, it will take you on a tour of the current crop of low-budget computers. Let's go!

What's the difference between a home computer and a personal computer?

Generally speaking, a personal computer is a small, powerful computer designed to be used in a business environment for budgeting, sales projections, payroll, marketing estimates and similar chores. Additionally, these machines have become a popular plaything for sophisticated computer hobbyists. A home computer, on the other hand, is designed to handle less complex business chores, but can manage household budgets and even perform simple word processing. Its main strength and appeal (to arcaders, at least), though, lies in the outstanding color graphics available for game-playing. Despite advertising claims, a personal computer (plus its necessary peripherals, such as mass-memory devices and printers) will cost close to $1,000: its home computer cousins come with a $300-$500 price tag.



What you need to know about hardware.

You don't have to be an engineer to understand the basic workings of a computer. Your $5 pocket calculator is actually the simplest type of computer. You enter information with a keyboard, the electronics inside do the numerical manipulations or computations, and the results are indicated on a display or paper printer. With a home computer, a typewriter-type keyboard is used to post instructions and data, a variety of semiconductor "chips" (aka, integrated circuits) act on the com-

mands and most often the home TV set is used to show the results.

Some keyboards, such as those supplied with the Atari 400 and Sinclair ZX-81, are touch-sensitive—meaning they don't operate or feel like conventional typewriter keyboards. They are usually a flat plastic sheet with a microswitch under each letter label. Users who can touch-type are usually slowed down by this, but non-typists have little objection. Most manufacturers, however, provide a conventional typewriter-style keyboard.

As is the case with TV-games systems, low-cost home computers are generally hooked up to the owner's black-and-white or color TV through an RF-modulator, a device connected to the TV antenna input that allows Channel 3 (or 4, depending on your location) to display the computer output. Unless you're prepared to pay $400 for a 13-inch color monitor as an accessory you will probably have to get accustomed to using your own TV set.

The video screen formats for home computers vary considerably. Some can display a 22-character line (any combination of letters, numbers, punctuation marks or spaces) while others can handle up to an 80-character string. Also, where one computer can offer 16 lines on the screen another has room for as many as 24. It should be noted that for game-playing purposes, screen format is inconsequential. Word processing, though, requires a minimum of 64 characters per line and a 16 line display.

One last note about hardware: Games enthusiasts are certain to enjoy the computer's outstanding, high-resolution graphics. Unlike the unscintillating visuals that mar most games systems, both home and personal computers dazzle the eye. Lines are cleaner, figures are detailed, colors varied and intense. And what if you're not so inclined to tackle some alien army in a space duel? Punch up a program for a graph or a chart and watch the difference a reasonably intelligent machine can make.

What's a "K" and how many do I need?

"K" is a measure of computer memory and memory is the lifeblood of computers. The instructions or program for any particular routine, such as income tax calculations, can be stored in a semiconductor "chip" called a ROM (or read-only memory). ROM is similar to instructions printed on a sheet of paper; it is permanently there for users to read from. In other words, a ROM chip can never be changed. Enter RAM (or random-access memory).

Since some calculations have to be temporarily saved or stored for later usage, there is a need for another type of memory. Where ROM coordinates the standard routines, RAM handles different numbers, data and calculations shuttling around inside the computer. If you will, RAM is like the "Magic Slate" kid's scratch pad—scribble notes and numerals, then simply raise the Mylar screen and, presto, your transmissions have disappeared... forever! With a computer, just clear the monitor and start anew. Or turn the power off and you can accomplish the same thing. ROM will always remain the same; RAM, though, is another story entirely.

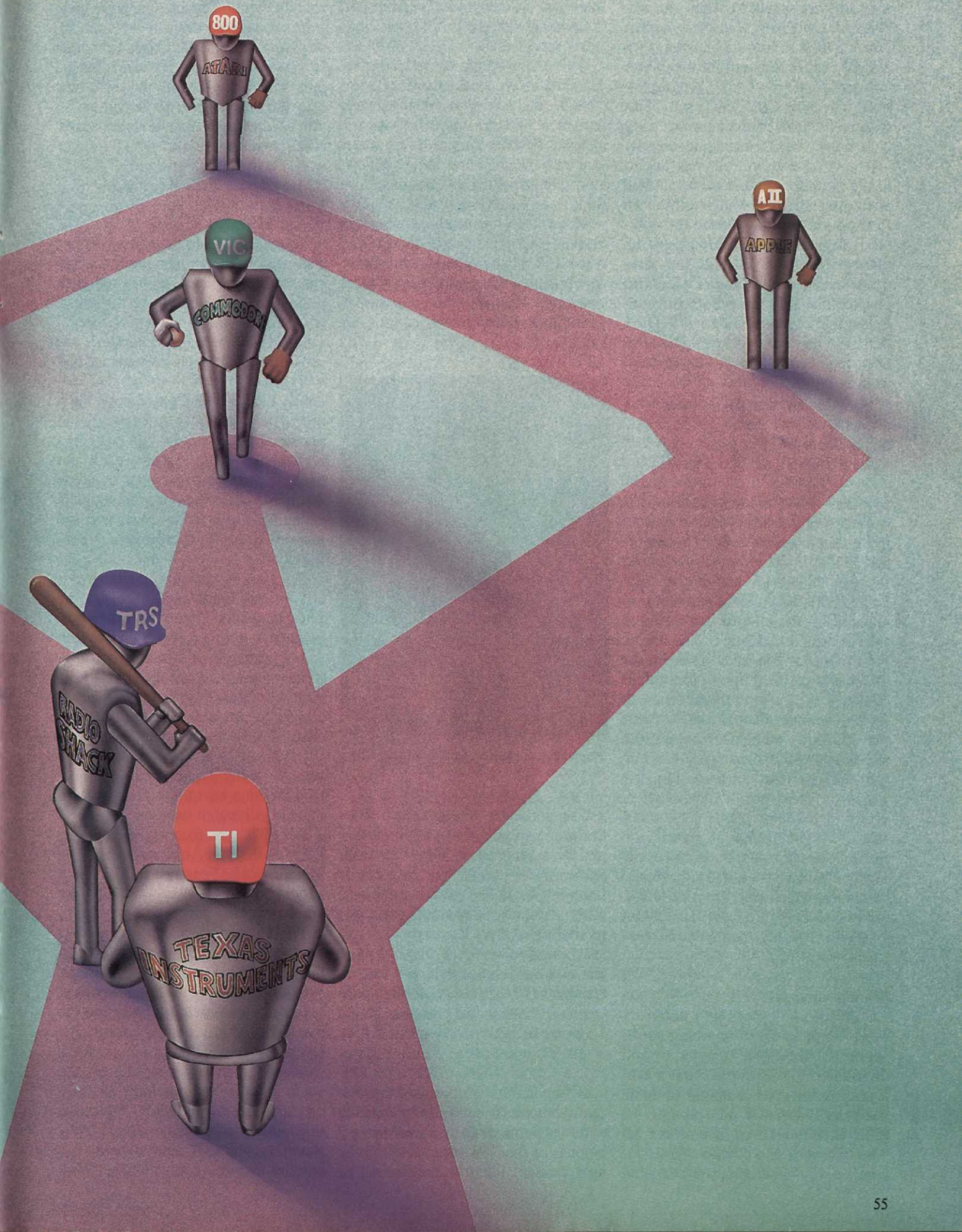
Now, about "K". A computer doesn't comprehend the letter "A" or number "1." It understands binary code or a sequence of bits. A bit is either an on or off signal; the best analogy is a light bulb, which can either be on or off—there is, simply, no in-between. A digital word for computers contains eight bits and it is called a byte. Various combination of bits are recognized by the machine as letters, numbers and punctuation marks—this enables it to communicate with us.

ROM and RAM is organized into memory cells. One "K" equals 1,024 bytes. So when a particular computer is said to offer 8K, this means it can store up to 8,000 bytes of memory (actually, 8,192 but let's not get too technical). Hence, an 8K memory can retain the equivalent of four typewritten pages, or about 8,000 letters. For home computers, that's adequate; for personal or business systems, though, from 32 to 64K is most desirable.

How do you store information (especially RAM)?

If you decide to write a program to keep track of your personal belongings or one for a new game you've dreamed up, you will need external storage to

Illustrated by Stanislaw Fernandes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save these instructions when the machine is turned off. A low-cost option (under $80) is to connect a high-quality cassette tape recorder to the computer. You can then record your program or save whatever data you want. This choice is reliable, but time-consuming (you know, fast-forward and reverse) —it may take several minutes just to locate the information you want. One alternative to this—and a giant step forward—is to store the information on a magnetic slice of flexible plastic known as the floppy disk. The disk-drive mechanisms designed for this purpose not only retrieve information in less than a second, but can hold up to 184K. (Isn't jargon fun?) The cost, however, is considerable— from $400 to over $1,000.

For the record, floppy disks are available in two sizes: 5¼-inch and 8-inch diameters. The latter holds four times as much data as the former.

Is there any way to keep "hard copy?"

Once beginners are accustomed to using their computers, they invariably decide that it would be terribly convenient to have print-outs of their programs. Sure, they can punch a button and call up the information stored in the cassettes or disks up on the screen, but this means you have to stare at the screen and jot down whole paragraphs or charts. With a printer that hooks up to the computer (just like the cassette player), simply manipulate data, check the monitor and then press a button that activates the copier—again, like magic, a "hard copy" of the actual screen display emerges. File the sheet, take it to your office or accountant, make copies for distribution at meetings. Thanks to these wonderful machines, which start from as low as $400 and climb to over $2,000 for typewriter quality, computerniks *can* take it with them.

What's software?

Software's the part that's not hardware. Want to know anything more? Seriously, there's a lot more you should know. Software is what makes it possible for your computer to do all the things that the ads promise. A game is software. An income tax adviser program is software. To put it another way—the book/story *Shogun* by James Clavell was software and the film/vidotape of the project was hardware.

Software comes in several varieties. The first is machine language software. This is the stuff that usually comes built in. It operates on the bit level and makes it possible for you to communicate with the computer using a higher-level (almost English) language like BASIC or LOGO or PASCAL. This software tells the machine where to find the memory, what to do next and when and all the other housekeeping details. You don't need to be any more concerned with this than you are with what flavor silicon they used for your chips.

Play arcade games like Gorf and Omega Race on Commodore's spacey VIC-20.

The software you're going to be dealing with are the programs that make the machine do what you want. Some of them you'll buy on tapes or floppy disks and, if you're ambitious, some you'll design yourself, using one of the higher-level languages that are easy enough to learn. Broken down to the simplest level, software is just instructions from you or another programmer telling the machine what needs to be done to complete a task, and when and how to do it.

* * *

Before I launch a review of the low-cost computers currently competing with one another, allow me to strongly emphasize that low-cost doesn't imply poor quality, inferior construction or shoddy manufacturing. Quite the contrary. A marked drop in the price of chips and resourceful designs by manufacturers have enabled powerful computers that might, only a few years ago, have cost three to ten times as much emerge to find a comfortable place in the home.

Radio Shack's TRS-80 Color Computer
(Price: $399)

Though it was not the first to enter the personal/home computer sweepstakes, Radio Shack is credited with dramatically expanding the market. More than 300,000 of the first-generation TRS-80 Model 1 computers are presently scattered in both homes and workplaces. A follow-up to that machine, the TRS-80 Color Computer is more "affordable" (as it is advertised), yet equally as versatile. Not only does it challenge you at chess, checkers and backgammon or allow you to chase down foes in outer space, it actually encourages kids to sit down and improve their math, vocabulary and typing skills.

Before it is attached to your color TV, this computer will appear to be nothing more than a typewriter without a carriage. The one-piece unit comes complete with a keyboard, internal memory and an interface to slip cartridges into (joysticks must be purchased for an extra charge of $25 a pair). A 53-key tactile keyboard provides the user with the feeling of keys actually being depressed; in addition, four function keys make program writing and editing an easy task.

For $399, you receive the minimum RAM—4K; the memory capacity, though, can be upgraded to 16K for an additional $99 or up to 32K for another $149.

The video display can accomodate up to 32 characters per line and 16 lines on the screen, but letters are restricted to upper-case. For lower-case, letters are presented in upper-case format with foreground and background colors reversed. This is a serious disadvantage for anyone planning to purchase a home computer for the purpose of text manipulation. Offsetting this minor inconvenience are perfectly sound graphics. A tone generator is another feature. It provides the neces-

sary musical scores and effects for games. They include: Chess, checkers, pinball, football, backgammon, Space Assault, Polaris, Quasar Commander and the maddening Color Cube.

Not into games, you say? Take an educational break and learn about programming (*Getting Started with Color BASIC* is one of the more comprehensive training manuals in the field), brush up on your typing or even try your hand at composing computer music. Or really get serious and pop in an investment analysis cartridge to determine interest and loan payments, stock and bond yields and financial strategies—with a little luck, you may even pay off your initial investment in the Color Computer.

The Atari 400 and 800
(Prices: $399 and $899, respectively)

Experts long have hailed the 400 for being tops in games entertainment, which is hardly surprising since Atari boasts the lion's share of the TV-games market. Among this machine's most striking features is its ability to produce 256 different colors on a color TV at once and sound a wide variety of musical notes and cosmic explosions.

As for the hardware, the 400 employs a flat, touch-sensitive, 57-key keyboard and offers both upper and lower-case letters on its 40-character per line, 24-line display. This style of keyboard, disliked by many typists who prefer tactile reinforcement, has one interesting plus: the plastic sheet is impervious to soft drink or coffee spills. Included on the board are 29 graphics entry keys as well as a number of function keys. Still, it is certainly not the most intelligent choice for those who are interested in applications such as office routines or word processing.

The 16K RAM does not include the 400's programming language, which is BASIC. Spelled out, this means the owner must immediately invest in options in the form of seperate units or packages. For gamers, the Entertainer package ($90) includes controllers and either a Star Raiders, Missile Command or Chess cartridges; joysticks cost an additional $20 a pair, cartridges go for $30 each. For would-be programmers, a Programmer package ($90) comes complete with a BASIC language cart, self-teaching manual and reference text. An Educator package ($200) includes a cassette recorder, the BASIC cart and an educational cassette; courses in French, Italian, German and Spanish as well as touch-typing and mortgage analysis are also for sale.

Hundreds of game carts can be purchased from numerous vendors. In addition, Atari provides their own Program Exchange (APX), which rates the software and even the programs' manuals, provided by an eclectic array of freelance programmers. As an example, the review of the game, Eastern Front, reads: "This is the best computer wargame we've ever seen. The graphic display is stunning. Because Eastern Front eliminates the drudgery of playing wargames, many people who've never cared for wargames before can enjoy this one. The game takes two or three hours to play and you can't save it, so be prepared for a marathon. The user manual is very good."

"Sinclair's ZX-81 is the lowest of the low-balls. As a matter of fact, you can even build it yourself for $99.95."

Among the peripherals available for the 400 is a cassette program recorder, a 5¼-inch floppy disk drive to expand memory to 92K and a printer.

The 400's big brother, the Atari 800, is quite capable of performing business and professional duties. The $899 price tag, however, can quickly increase to thousands of dollars as peripherals are added. Although the low-end 800 only includes 8K of RAM, 8K of internal ROM and the 8K of BASIC in the ROM cartridge, additional memory expansion modules can be added up to 48K of RAM and 26K of ROM. For mass storage, up to 368K can be added through the use of four mini-floppy disk drives. Each drive can store up to 92K in a diskette.

The 800 includes a full-size typewriter keyboard, a cassette recorder and game buttons on the front panel. For the convenience of 400 owners who decide to upgrade to the 800, all programs and games for the 400 can be run on the 800; similarly, all peripherals purchased for the 400 can be used on the 800 as well.

Commodore's VIC-20
(Price: $299)

Commodore, with the lowest-priced full-size keyboard computer, is a veteran of the personal computer business, dating back to 1976 when it introduced the PET (Personal Electronic Translator). Initially, the PET which featured a black-and-white, nine-inch video display and cassette recorder was priced at the extraordinarily low cost of $600; and that's when chips were considerably higher priced. The PET had one major drawback though—namely, the tiny, touch-sensitive, 73-key keyboard that used calculator-type push buttons. When this inconvenience was eliminated in favor of a full-sized keyboard, Commodore quickly became the third largest supplier of personal computers (behind Radio Shack and Apple) with over 150,000 units sold.

The VIC (Video Interface Computer)-20, which sells for $100 less than its competitors, offers color graphics and sound capabilities intended especially for game enthusiasts and a keyboard that is considered highly preferable for business and word processing applications. The home computer includes an RF modulator, an AC power adapter and four plug inputs for peripherals like controllers, cassette recorder, printer and disk drive. The 65-key keyboard has upper and lower-case letters with 22 characters per line (not advisable for word processing) and 23 lines per screen. As many as three musical tones—tenor, alto, soprano—plus special effects can be generated and routed through the TV speakers. A slot located in the rear of the VIC permits up to four cartridges (RAM or ROM) to be connected at the same time. Among the game cartridges available are Draw Poker, and Superslot and two licensed arcade games, Omega Race and Gorf. (Commodore, incidentally, is the second home/personal company to negotiate such a deal with a

coin games manufacturer—Atari, beware!) For those more inclined towards business applications, there is the VIC Typewriter Word Processor, Home Inventory, and Personal Finance just to name a few.

When connected to a color TV, the VIC can display normal and reversed characters in eight colors. A 3K memory cartridge can be plugged in; if additional memory is required, 8K or 16K cartridges can be combined through the master control panel accessory that plugs into the cartridge slot to provide as much as 32K programmable memory.

Texas Instrument's 99/4A (Price: $599)

In 1979, the world's largest manufacturer of semiconductors, Texas Instruments, jumped into the personal computers business with their $1,150 99/4 model. Not only was the price steep, but the keyboard—it had only 40 keys—was flawed and the software limited. The public's response was negative and for good reason.

While commiserating back in the lab, TI's engineering braintrust redesigned the computer this time with the consumers' needs firmly in mind. The more reasonably priced 99/4A (many stores discount it for as low as $400) features an improved typewriter-feel keyboard and enormous memory capability (16 RAM, 26K ROM and a plug-in opening for solid-state command modules with up to 30K ROM), far exceeding that of other home computers. The streamlined console packs a wallop with TI's 16-bit microprocessor, which is twice as powerful as the nearest competitor's. In addition, several other chips are used for screen display and generating sounds; in effect, this frees the central microprocessor to execute its complex tasks without the added burden of messengering audio and visual effects.

The 99/4A, if you haven't already guessed, is aimed squarely at the home market. Either connect it to your TV or purchase the ten-inch color monitor for another $299. The display manages up to 32 characters per line (upper case letters show up as large caps, lowercase as small caps) and can handle as many as 24 lines of text. High-resolution, 16-color graphics offer sharp visuals and three seperate tone generators—each spanning five octaves—combine to form a stimulating environment for the bonafide gamester. Among the software available is several made-for-TI cartridges by Milton Bradley such as The Attack, A-Maze-Ing, and Hunt the Wumpus. Insofar as actual programming is concerned, the 99/4A speaks two languages—BASIC and LOGO, the computer dialect especially written for children.

Another advantage of this unit is the speech synthesis accessory. Brought to you by the makers of the innovative Speak and Spell teaching device, the 99/4A converses with you robot-style; this feature is of particular value for children who are too young to read what is displayed on the screen, but would like to play with the unit nevertheless. Again, TI shows that youngsters' needs are a constant concern of theirs.

"Software's the part that's not hardware. Seriously, software tells the machine what needs to be done and how to do it."

Other peripherals which plug into the 99/4A are a telephone coupler (modem) for communicating messages and data between computers via telephone lines, a cassette recorder, a disk system capable of holding up to three disk drives (each with 90K memory capacity) and a printer. Joysticks are also available.

Sinclair's ZX-81 (Price: $150)

The lowest of the low-balls, the $150 ZX-81 computer, is the brainchild of Clive Sinclair, a prolific British gadgeteer who's responsible for other such devices as one of the earliest pocket calculators, digital watches and a tiny, flat-screen TV. As a matter of fact, this bargain is even cheaper ($99.95) if you have the wherewithal to build it yourself.

The ZX-81 may not serve as your small business computer, but don't write it off as a toy either. Only 6 x 6½ x 1½ inches in dimension and weighing in at twelve ounces, this shrimp of a computer could very well become the most popular at-home model in the years to come. Well aware of this development, software suppliers are stepping up their campaign to reach the ever-growing ZX-81 market. Presently, educational, personal finance, tax computation and games (by Softsync) cassettes have been made available.

Sinclair's original entry, the ZX-80, appeared on the scene in 1980 and found an audience of hobbyists and students attracted to the unit by its incredibly affordable price. The follow-up, the ZX-81, was redesigned using four integrated circuit chips instead of the 18 inside its precursor. Like each of the units discussed so far, this machine connects to a TV. Its features include a 24-line video display with up to 32 characters (caps only) and a small keyboard of the touch-sensitive variety, which means you'll never know whether you've hit the correct key without watching the screen at all times. Only 40 keys are provided.

Another drawback is the ZX-81's pint-sized memory capacity: 1K RAM and 8K ROM. Since 1K is hardly sufficient for even short programs, Sinclair does offer an optional 16K expansion module for $100 that plugs into the back of the unit.

The ZX-81 isn't an Apple (see next section) by any stretch of the imagination; rather, it provides the absolute novice with an introduction to computers at—and I cannot overemphasize this point—a minimal price. Also, so portable is this machine that computer buffs have been cited connecting the tiny ZX-81 to their motel's TV set while on the road. Now, that's what you call mileage.

The Apple II (Price: $1,300)

Despite the high price tag, I've decided to include the Apple II in this compendium. Next to Radio Shack's Color Computer, it's the hottest-selling personal/home computer in the country. Best known for the scores of games and various programs that have been designed for it, how could I possibly

(Continued on page 80)

The Theory of Heavolution

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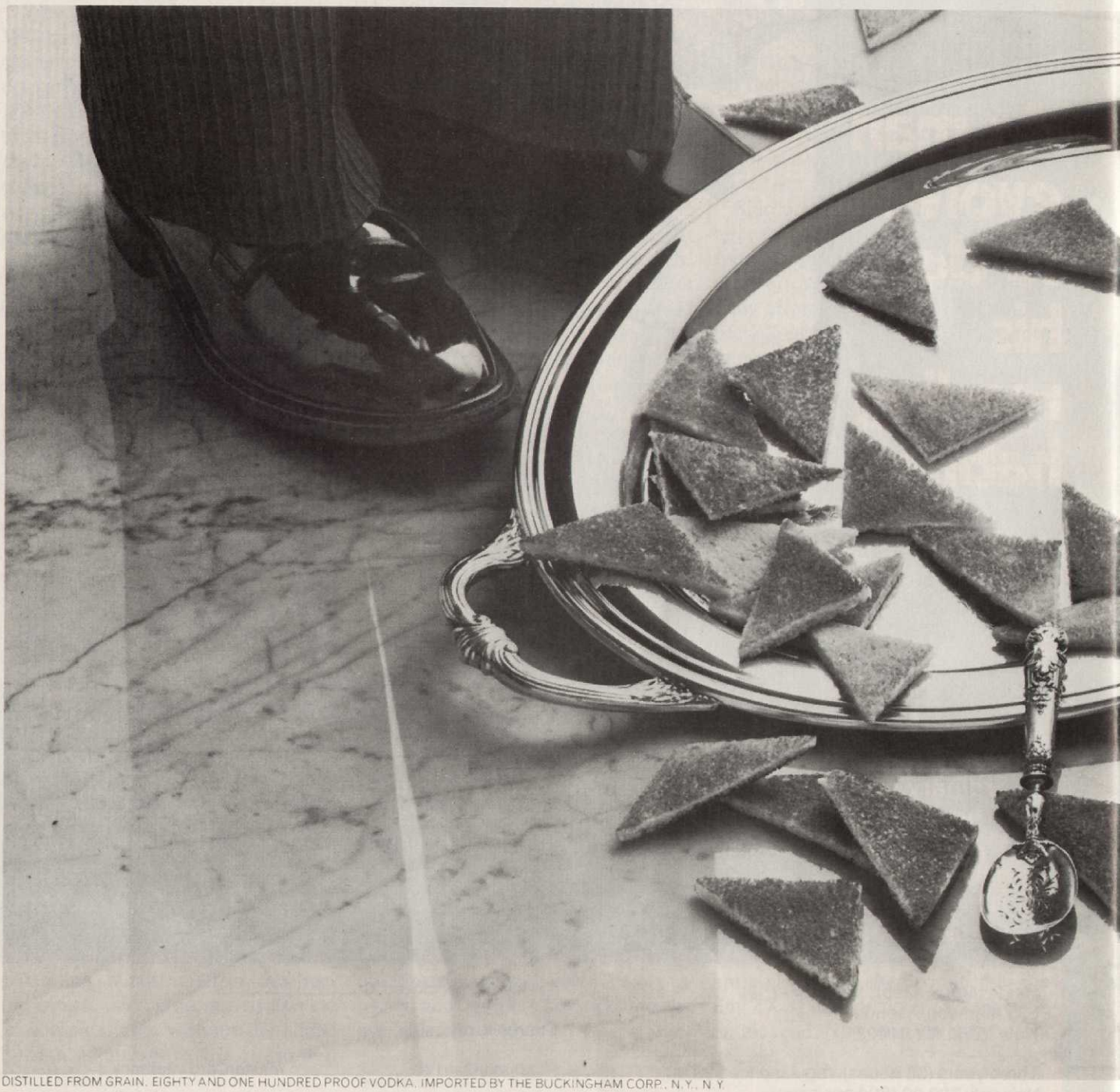
"No madam, I didn't



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HEY, BUDDY! CAN YOU SPARE A QUARTER?

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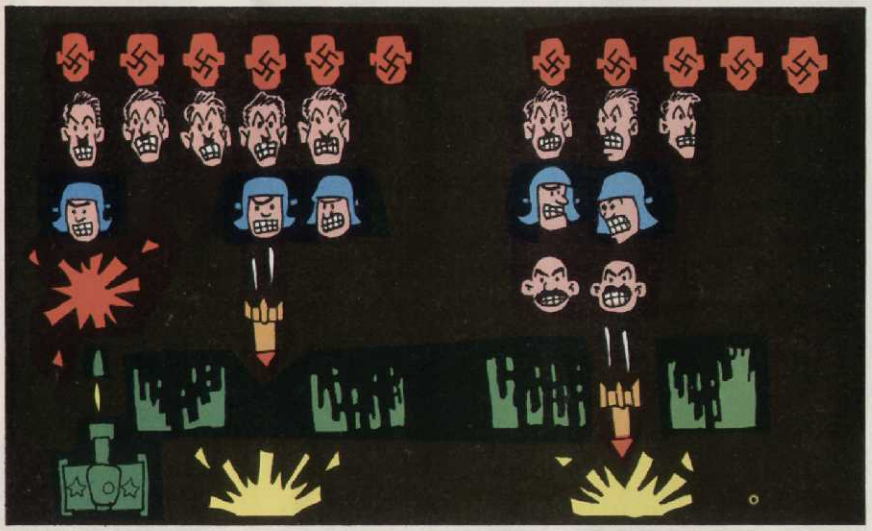
VIDEO GAMES HAVE REACHED THAT DIVINE PINNACLE ONCE HELD BY COMIC BOOKS, ROCK'N'ROLL, AND T.V. – PARENTS AND CIVIC LEADERS WANT TO MAKE THEM EXTINCT. ACCORDING TO THESE AUTHORITIES, VIDEO GAMES CAUSE EVERYTHING FROM BLINDNESS, DRUG ADDICTION AND PHYSICAL DEFORMITY TO BAD ATTITUDES, LOW GRADES AND **MILLIONS** OF SCHOOL **DROPOUTS**.

THE REAL REASON THESE SOURPUSSES WANT TO STOP VIDEO GAMES IS THAT **THEY** DON'T KNOW HOW TO HAVE **FUN** AND CAN'T **STAND** THE IDEA OF ANYONE ELSE HAVING ANY. **MISERY LOVES COMPANY**. THEY DON'T UNDERSTAND THAT VIDEO GAMES ARE CREATING A RACE OF SUPERIOR BEINGS ABLE TO CLIMB TALL BUILDINGS, KILL ALIEN INVADERS, AND SAVE THE WORLD WITH THE PUSH OF A BUTTON.

PEOPLE WHO WANT TO STOP VIDEO GAMES ARE LIKE THOSE FOLKS WHO THOUGHT HUMANS WOULD NEVER **FLY** OR THAT RADIO BROADCASTS WOULD KEEP PEOPLE OUT OF BALL PARKS. THEY'RE AFRAID OF THE **FUTURE**, AND VIDEO GAMES ARE FUTURE SHOCK TO THEM. BUT THE **REAL** DANGER ISN'T THAT THESE SMALL MINDS WILL CLOSE DOWN THE ARCADES OR OUTLAW THE MACHINES. WHEN PARENTS PTAS AND THE MORAL MAJORITY START DEMANDING "EDUCATIONAL GAMES" **WATCH OUT!** BE WARNED – JUST AS THEY CLEANED UP SATURDAY MORNING CARTOONS, THEY'LL TAME VIDEO, TOO. SO KILL, MAIM AND BLOW UP WHILE YOU CAN – YOUR DAYS **MAY** BE NUMBERED.

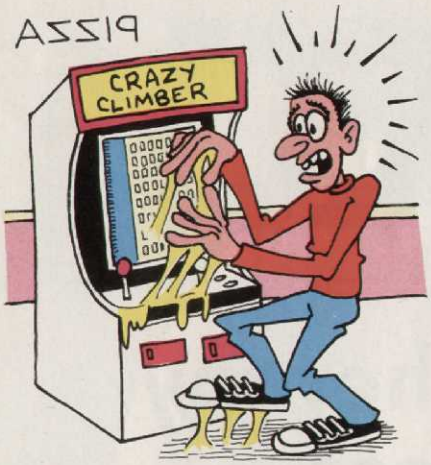


I DON'T UNDERSTAND WHY DESIGNERS COME UP WITH SUCH ANONYMOUS **OPPONENTS**. I JUST CAN'T GET ALL THAT WORKED UP OVER BLASTING ALIENS, ASTEROIDS, OR CENTIPEDES. MAYBE IT'D BE TOO TACKY TO PUT TOGETHER AN EL SALVADOR GAME OR A BLOW-UP-YOUR-LOCAL-HIGH-SCHOOL BOUT, BUT WHY NOT VID VERSIONS OF KILL THE COMMIES OR NUKE THE **NAZIS**? WE NEED MORE TASTELESSNESS IN GAME DESIGN. I UNDERSTAND THAT THE **SAME** DAY THE BRITISH FLEET SAILED FOR THE FALKLANDS, PREXTEL (THE U.K. VERSION OF WARNER'S QUBE) CARRIED A GAME CALLED SINK THE ARGENTINE. NOW **THAT'S** MORE **LIKE** IT!

IT'S VERY DIFFICULT TO MEET GIRLS IN ARCADES. I DON'T KNOW **WHY**. THERE'S SO MUCH DEATH AND DESTRUCTION, NOISE AND FLASHING LIGHTS – HOW MUCH MORE ROMANTIC CAN YOU GET? PROBLEM IS, MOST GIRLS COME IN WITH THEIR BOYFRIENDS OR TO GET AWAY FROM PEOPLE. AND MORE MEN THAN WOMEN PLAY GAMES, ANYWAY. PLAYING GAMES ON A DATE CAN BE A GOOD THING, THOUGH. IT'S A GREAT WAY TO BREAK THE **ICE** (OR RELIEVE BOREDOM). IF YOU'RE LUCKY, YOU MAY FIND A COMMON INTEREST. JUST REMEMBER THAT IT'S VERY HARD TO HAVE AN INTIMATE TALK WITH SOMEONE WHILE YOU'RE PLAYING A VIDEO GAME.

VIDEO GAMES ARE SEXY. A FRIEND OF MINE POINTED OUT THAT GIRLS LIKE **PAC-MAN** BECAUSE THE PAC-MAN ENGULFS ITS OPPONENTS, ECHOING **FEMALE** SEXUALITY, WHEREAS MOST VIDEO GAMES FEATURE **PHALLIC** SYMBOLS SHOOTING BULLETS OR ROCKETS AT FOREIGN BODIES. **DONKEY KONG** IS A ROMANTIC FANTASY FOR BOTH PARTIES. WOMEN CAN FANTASIZE ABOUT BEING HELD AGAINST THEIR WILL BY A BIG, DUMB APE WHILE MEN CAN DREAM ABOUT RESCUING SAID WOMEN BY BLOWING UP BARRELS. MAYBE **THIS** IS THE GAME FOR YOU AND YOUR DATE.

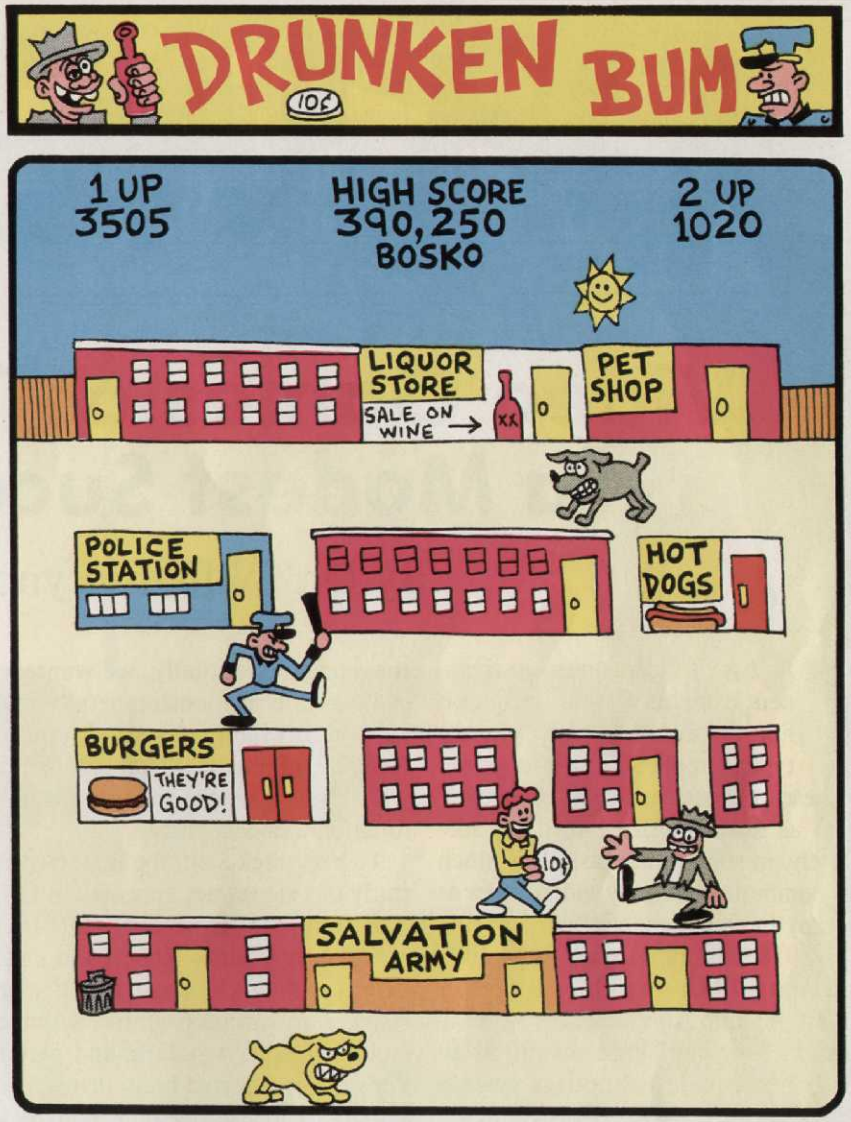
A5519



MY FAVORITE PLACE TO PLAY GAMES IS A NICE, SLEAZY BAR. TO SIT DOWN IN A NEUTRAL CORNER, POP A COLD ONE, AND PEACEFULLY KILL OR BE KILLED IS MY IDEA OF **PARADISE** ON EARTH. ALAS, SUCH IDYLLIC LOCATIONS ARE FEW AND FAR BETWEEN. TOO OFTEN YOUR ONLY CHOICES ARE ARCADES OR PIZZA PARLORS.

PIZZA PARLORS ARE THE **PITS**. THE LIGHTING IS TOO BRIGHT, THE MACHINES ARE GREASY AND THE PLAYERS ARE USUALLY NASTY BRATS. IT'S NO FUN TO HAVE FIVE OR SIX RESTLESS KIDS STANDING AROUND STICKING QUARTERS ALL OVER THE MACHINE AND WAITING FOR YOU TO FAIL. IF THEY'RE IMPATIENT, THEY JUST STICK 'EM IN WHILE YOU'RE PLAYING. THE **WORST** ONES ARE IN SUCH A HURRY THAT WHILE YOU'RE TRYING TO STAY ALIVE THEY'LL TAP YOU ON THE SHOULDER AND ASK, "HEY, ARE YOU NEXT? IS THAT **YOUR** QUARTER? **HEY** - DINCHA **HEAR** ME? ARE YOU NEXT OR WHAT? OH, GOOD, YOUR GAME JUST **ENDED!**"

ARCADES ARE BETTER THAN THE PIZZA PITS, BUT THERE ARE DRAWBACKS THERE, TOO. OPERATORS DON'T ALWAYS TAKE CARE OF THEIR MACHINES AND YOU MAY BE RISKING A QUARTER JUST TO FIND OUT WHETHER THE MACHINE WORKS OR NOT. BEWARE OF "**PLAY AT YOUR OWN RISK - NO REFUNDS**" SIGNS.



DONKEY KONG OPENED UP A NEW FRONTIER FOR VIDEO GAMES - A **STORY** LINE. YOU GOTTA HOPE THAT DESIGNERS CONTINUE TO CREATE SUCH IMAGINATIVE GAMES USING SIMILARLY WACKO IDEAS. RUMOR HAS IT THAT CARTOONIST BILL GRIFFITH - CREATOR OF **ZIPPY THE PINHEAD** - IS DESIGNING A ZIPPY GAME. GREAT! MAYBE IF THE DOOR IS OPENED UP FOR MORE NEW TALENT WE'LL SEE BETTER GAMES.

I HAVE AN IDEA FOR A GREAT GAME. IT'S CALLED **DRUNKEN BUM**. IT FEATURES A BUM WHO STUMBLES THROUGH STREETS AND ALLEYS AVOIDING POLICEMEN AND BIG DOGS, PICKING UP SPARE CHANGE AND ENOUGH BOTTLES TO GET DRUNK BEFORE IT GETS DARK AND THE LIQUOR STORES CLOSE. WHO **WOULDN'T** WANT TO BE A DRUNKEN BUM FOR A FEW MINUTES, RIGHT?

OUT OF ALL THE GAMES IN THE ARCADES RIGHT NOW, I STILL THINK **BERZERK** HAS THE BEST TARGETS. THOSE ONE-EYED ROBOTS ARE VERY CREEPY AND DEFINITELY DESERVE TO DIE. BERZERK IS A **VERY** PARANOID GAME. YOU'RE LOCKED IN A ROOM WITH ALIEN ROBOTS WHO WANT TO KILL YOU. THERE'S NO SAFE PLACE IN THE ROOM AND EVEN THE WALLS ARE DEADLY. IF YOU **DO** MANAGE TO ESCAPE, YOU JUST ENTER ANOTHER ROOM WITH EVEN **MORE** ROBOTS.

VIDEO GAME MANUFACTURERS ARE MAKING A BIG **MISTAKE** BY RAISING THE STAKES TO FIFTY CENTS. THAT'S WHAT KILLED PINBALL. FIRST THEY CUT BACK FROM FIVE TO THREE BALLS AND THEN JUMPED THE PRICE. VERY BRIGHT. IT WOULD BE LIKE BASEBALL GIVING YOU **SIX** INNINGS INSTEAD OF NINE. SO VIDEO GAMES CAME ALONG AND HAVE NEARLY PUT THE PINBALL COMPANIES OUT OF BUSINESS. OF COURSE THEY'RE NOT **THAT** STUPID. THEY'RE FIGHTING BACK, FIRST WITH MULTI-LEVEL, SUPER-SONIC PINBALLS AND IF **THAT** DOESN'T WORK (IT DOESN'T LOOK LIKE IT **WILL**) WELL, THERE'S ALWAYS **VIDEO**.

DR. VIDEO

Video Games as Therapy a Modest Success

By Dr. William Lynch

The use of videogames in therapeutic or educational settings is not uncommon . However, the typical application of the games in these contexts has been to employ them as rewards for performing adequately on some other task. It is much less common to employ videogames as therapy in and of themselves.

In 1978, the Brain Injury Rehabilitation Unit (BIRU)—which I am director of—at the Palo Alto Veterans Administration Medical Center acquired an Atari home videocomputer system (VCS) for the purpose of providing recreation and reinforcement for patients undergoing rehabilitation for various brain disorders. It occurred to me that certain of the games contained elements that could be of benefit to several of our patients. Since many brain-impaired persons encounter problems with alertness, attention, concentration, memory, and perceptual-motor skills, it seemed logical to utilize videogames as a means of improving these functions. I thus began, with the assistance of BIRU staff member Tom Ragain, to collect data in a more systematic fashion.

We began by prescribing videogames therapy to certain patients who exhibited problems with reaction time, alertness, memory or eye-hand coordination. Our first intention was to simply observe a number of patients with a variety of brain disorders in order to determine whether brain-impaired individuals could learn the skills required by the games. Eventually, we wanted to evaluate the relationship between skill at playing certain video games and performance of practical "real-life" abilities which bear upon the patient's ability to function independently.

To backtrack a bit, the first scientific study of videogames appeared in 1978. The study was carried out at SRI International by Charles Rebert and David Low, and dealt with the brain's response to various cognitive activities, including both watching and playing Pong. They inferred brain hemispheric activity by measuring alpha activity on the EEG (the electroencephalograph records and detects brain waves). Among their findings were the observations that the brain seems to show increased right hemisphere activation when one either watches or plays Pong. Right parietal activity is evident under either condition (while watching or playing) while central and temporal activity increased when the subjects played Pong.

A more recent study by Renee Okoye and Tony Hollander, both Occupational Therapists working in the New York area, suggested that a program of structured videogames training was more effective than standard fine-motor skills training in a small sample of learning disabled children. They provided two similar groups of learning disabled children with identical gross motor skills training; one group was given standard fine motor skills training, while the other received 30 minutes of Atari videogames such as Air-Sea Battle and Brain Games. After 12 weeks of training (twice a week) the groups were compared on a variety of independent pre- and post-treatment measures. The videogames-treated group was found to have improved by "at least one standard deviation" on measures of eye-hand coordination and kinesthetic awareness. The control subjects failed to demonstrate the degree of improvement shown by the experimental group.

Which games are most useful?

Although there are a number of games that we have found useful, we have attempted to prescribe one game which the majority of patients can learn to play. The result of our effort led us to select Atari's Breakout as the "common game" shared by the majority of patients (the reason for this will be explained shortly), but most Atari game programs can be divided into four categories.

Games involving verbal/mathematic skill: Verbal games are unfortunately quite rare among videogame programs. Atari's Hangman is the only program which requires spelling ability. Mathematic games are more plentiful. Aside from the obvious Fun With Numbers program, we have used Codebreaker, Blackjack, Brain Games, and Casino, all of which require rapid mental calculations. Often, patients who resist the more traditional math drills con-

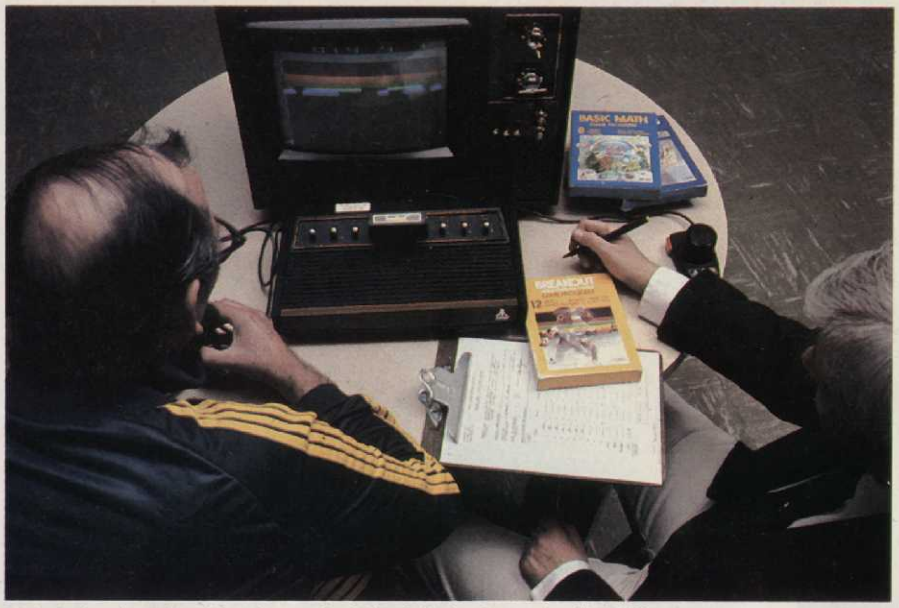
Illustrated by Stanislaw Fernandes

©1982 Stanislaw Fernandes

tained on the Fun With Numbers program will respond more favorably and enthusiastically to a card game program which somehow does not appear to be as dull as traditional mathematics lessons seem to be.

Games involving memory: There are two excellent game programs which require efficient immediate memory for number sequences as well as for designs and spatial sequences. The Brain Games program contains three helpful games: Touch Me is a game in which the patient is confronted with a 3 x 2 or 3 x 3 matrix of blank rectangles. His task is to recall the sequence of rectangles which are highlighted both by the words "touch me" as well as by a specific auditory tone. The patient thus can rely on auditory or visual memory (or both) in order to succeed at the task. Picture Me requires the patient to recall a sequence of four geometric shapes and Count Me is a videocomputer version of the standard Digit Span task. In the Concentration game program, a version of the venerable TV game show of the same name, the patient must recall the location of various objects which are revealed briefly on a 4 x 4 or 5 x 6 square matrix.

Games involving perceptual-motor skills: There are a number of game programs which are helpful in remediating slowed eye-hand coordination. As mentioned above, we have used the games Breakout and Super Breakout with many of our patients. These games require quick reaction time, smooth visual tracking and estimation of speed. The eye movements required are not simply horizontal (as in Pong), but are also vertical and oblique as well. Some other games which have been found to be helpful include the various driving-related programs such as Night Driver, Dodge 'Em, Indy 500, Slot Racers and Street Racers. We've found Air-Sea Battle, a shooting gallery game in which targets emerge either from the right or left of the video screen at varying speeds and levels, aids patients who have problems with reaction time (either too fast or too slow) or lateral visual tracking. In order to perform well, the patient must respond promptly, but not impulsively to the objects which appear at unpredictable locations and speeds.

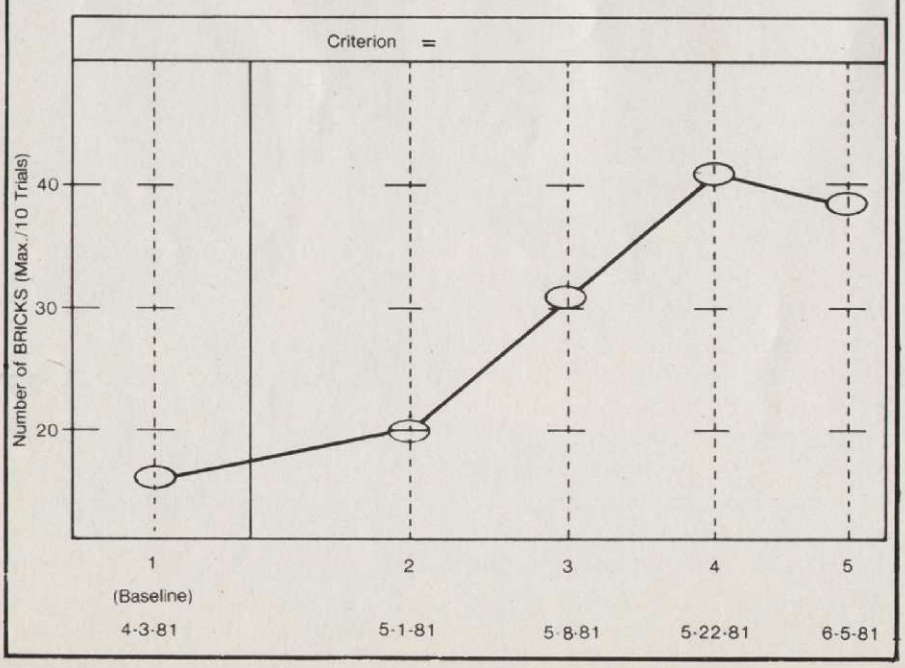


Brain-injured patient "breaks out" of his shell thanks to Atari's VCS.

Due to the complexity of visual information which the patient must process simultaneously, popular games such as Space Invaders, Asteroids and Missile Command have not proved helpful with most of our patients. These programs, along with the additions of Pac Man and Defender, may be best utilized as rewards for mildly impaired patients who are better able to accommodate the great amount of information required in order to play these games successfully. The same could be said of most of the sports games (Basketball, Football, Home Run and Pele's Soccer); they tend to be too complex for most patients to enjoy. I should note that the various programs marketed by Activision have been of value for some of our patients. The Freeway game, in which the player must move a chicken across a highway, is helpful in training to utilize judgment, anticipation and estimation of speed of objects.

Table Games: As a rule, we have not found games such as Video Chess, Video Checkers, Backgammon and 3-D Tic-Tac-Toe to be especially useful because of the difficulty in learning the rules. The 3-D Tic-Tac-Toe game is in-

1. PROFILE: VIDEOGAME PERFORMANCE (5 SESSIONS)
GAME: BREAKOUT



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triguing, but the four 4 x 4 planes which the patient must attend to are too confusing for the great majority of those with even mild impairment.

Findings at BIRU

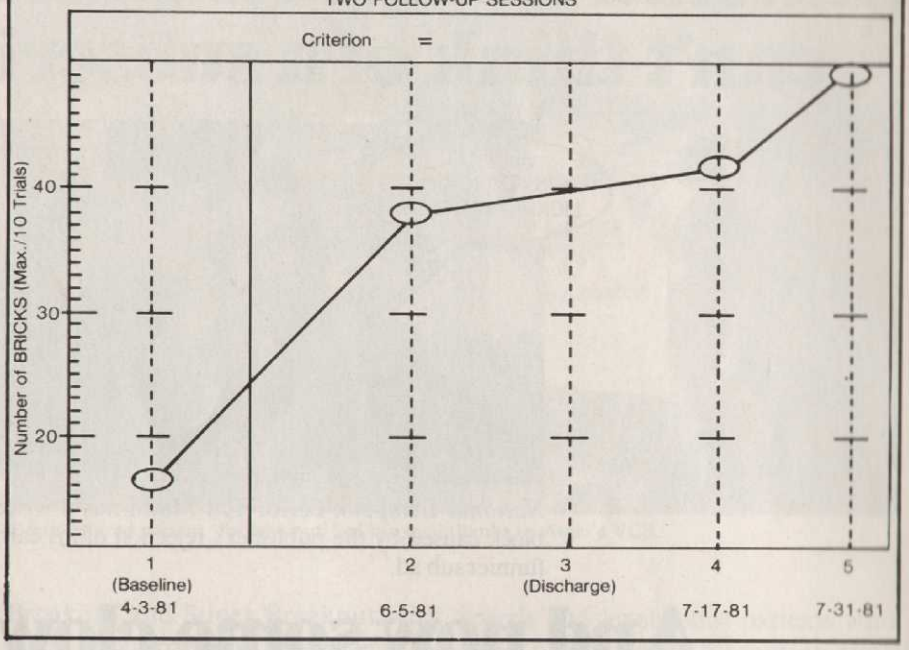
At the BIRU, we have been gathering data on videogame performance of patients with a variety of brain disorders. Figure 1 illustrates the performance of a patient who sustained a closed head injury approximately one year prior to beginning training on the Breakout game. The initial score represents his baseline level of performance which is a score of 12. In our experience, most normals attain an initial Breakout score of around 100 (maximum score for first 10 games). The chart indicates that this patient quickly improved his level of performance on the next four sessions; after two months (weekly sessions) he had bettered his score to the 37 to 41 range. At the same time, he showed improved alertness, faster reaction time and smoother (but not normal) eye-hand coordination.

Figure 2 represents the Breakout data for this same patient at four different times: baseline; after 2 months of treatment; one month after discharge (with no treatment since discharge); and six weeks after discharge. The results show that he was able to maintain (in fact, he improved upon) the skill level attained prior to discharge.

Our findings with other patients have been promising, although we do not consider such preliminary observations to be conclusive. We have begun to compare the performance of our patients on videogames with their abilities on independent, yet related, measures of alertness and general responsiveness to the environment.

In the near future, our plan is to obtain periodic samplings of each patient's mental status, reaction time and perceptual-motor skills and to then systematically introduce or withdraw videogames training in order to determine the effects (or lack) of the training upon these independent measures. Finally, we would like to define the relationship between skill on videogames and the patient's Activities of Daily Living or ADL. After all, it is the patient's level of independence and ability to cope with the requirements of the real world which concern us. We are not interested in improving skills on videogames unless these skills have practical significance for the patient in the course of his/her rehabilitation.

2. PROFILE: VIDEOGAME PERFORMANCE (5 SESSIONS)
GAME: BREAKOUT
TWO FOLLOW-UP SESSIONS



Future developments

The use of videogames and computer-assisted retraining in rehabilitation should continue to increase, though due to severe budget restrictions the expanded use of this methodology may be slowed in many parts of the country. I am certain that the major microcomputer manufacturers such as Atari, Apple, Radio Shack and Commodore will gradually release more software designed specifically for use with disabled populations.

Meanwhile, clinicians with expertise in computer programming have already begun to write their own programs for such use. Psychologist Dick Bracy at the Community Hospital of Indianapolis has written a series of programs (for Atari's 400 and 800 computers) which are designed for use with patients following brain trauma or stroke. These programs deal with such abilities as attention-shifting, initiation/inhibition skills, discrimination and differential responding. Dr. Rosamond Gianutsos of Adelphi University in New York has also written a number of programs (for the Radio Shack TRS-80 microcomputer), which are useful in treating visual-perceptual as well as memory disorders. I have included the mailing information for both Dr. Bracy's and Dr. Gianutsos' software and price list for the reader's convenience. Additionally, both the Atari Institute for Educational Action Research and the Apple Institute have extensive software libraries containing programs which are helpful in retraining brain-impaired patients.

With advancements in software sophistication and graphics, videogames and computer programs in the near future will provide the clinician with a valuable tool for the diagnosis and rehabilitation of brain impairment of various types. Games will continue to be enjoyable, but their tremendous potential as teaching aids has yet to be appreciated.

I am convinced that part of the problem with the public's timidity about videogames lies in the fact that we are unable to accept as beneficial anything that also happens to be enjoyable. The generally bad publicity surrounding arcades, while justified at times, does seem to result, in part, from a conviction that if our kids are doing it, it has to be bad for them. Parents, many harkening back to the legend of the Pied Piper, see videogames as having the capacity to lure their children away from the responsibilities of family and school. Surely, there are some who spend excessive amounts of money and time

(Continued on page 79)

No one wakes up thinking, "Today I'm going to abuse my child."

Abuse is not something we think about. It's something we do. It runs against our nature, yet it comes naturally. It's a major epidemic and a contagious one. Abused children often become abusive parents. Abuse perpetuates abuse.

Child abuse is a major cause of death for children under two. Last year in America, an estimated one million children suffered physical, sexual or emotional abuse and neglect (many cases go unreported). At least 2,000 died needless, painful deaths. And if you think child abuse is confined to any particular race, religion, income group or social stratum, you're wrong. It's everybody's problem.

What's being done about prevention? Not enough. Preventive facilities are simply inadequate. Most social agencies deal with abusers and their victims after the damage has been done.

Child abuse doesn't have to happen. With your help, most abusers could be helped. Your community needs your aid in forming crisis centers, self-help programs for abusers, and other grass roots organizations. Please write for more information on child abuse and how you can help.

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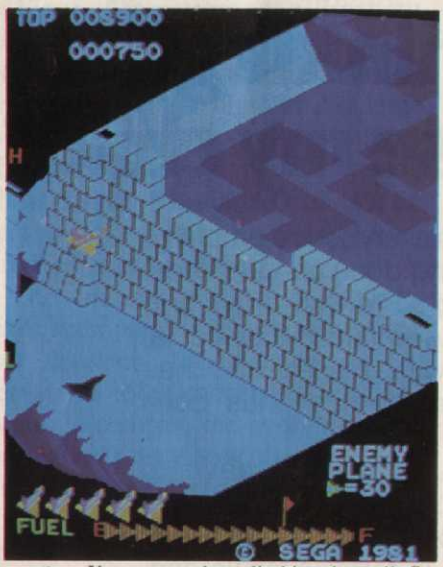
COIN-OP SHOP

AOE Report: Showdown in Chi-town

By Steve Bloom

Twice a year, the video game and pinball manufacturers, distributors and operators (arcade owners and route-runners who split the coin-box take 50-50 with bars, bus stations and wherever else these fine games are found) convene in Chicago—the original home of the coin-operated amusement business. During the first weekend of



1 You may end up climbing the walls figuring out this ZAXXON maneuver.

November, the Amusement & Music Operators Association (AMOA) invites its members to Chi-town for their annual event. Essentially, the AMOA trade show is the largest arcade in the world—hundreds of cacophonous coin-eaters stationed on the floor await the verdict of thousands of jurers, who move slowly from booth to booth, noting the qualities and deficiencies of each. All of these loud-mouthed, carnival-like creations are screaming out to be liked, but sadly, most will return from whence they came never to be toyed with again. In one sense, the AMOA is a cruel, cold-blooded, affair.

Very much the same can be said about the AOE, or Amusement Operators Expo—the upstart showcase organized by one of the industry's two trade publications, *Play Meter*. Only three years old (compared to the 50-plus AMOA), the AOE has quickly assumed the role as a purposive mid-season festivity, fully attended by all the manufacturers (except for Atari, whose feud with the magazine has kept them away), operators and press. Held during the last weekend of March, it has proved to be as comprehensive an exhibit as the AMOA and even somewhat more informative. Seminars catering to operators' particular needs and interests distinguish the AOE from its fall counterpart.

I attended the recent AOE, which was staged at the Chicago Hyatt from March 26-28. What follows is a diary of three whirlwind, game-filled "daze."

Friday, March 26

I arrive at the Hyatt at noon. Since the floor closes at four, I begin scurrying around the maze of exhibits at a furious clip. Like Pac-Man, I ravenously gobble up one blaring booth after the next. With little time to waste, I stop momentarily to jot down the features of a new piece in my pad, then move on. No playing today. This, mind you, is not easy to do since all the machines are set on credits—in other words, they're free!

Surprisingly, it doesn't take long to get a fix on the three videos "Most Likely to Succeed" in 1982. I say surprisingly because each of the four previous superstar games—Space Invaders, Asteroids, Pac-Man and Defender—all escaped the tastemakers' smarmy predilections in the past. Williams' **Robotron 2084** (created by Eugene "Defender/Stargate" Jarvis and Larry "Stargate" DeMar) combines the speed and control board simplicity (two eight-way joysticks, one for firing, the other to move) of Tempest, Defender's compulsion to save humanity from some awful deed and Berzerk's basic shoot-'em-up stra-

2 Strafing the fortress' fuel tanks is key to survival in space.

tegy. It's more or less a Berzerk Deluxe.

DeMar confirms this assessment when he admits that both he and Jarvis are Berzerk bonzos. Another inspi-

ration was Midway's Omega Race. This I discover as Ron Halliburton, Omega's principle designer, stands poised at the controls, giving "Robo" (as DeMar calls it) a whirl. Explains DeMar to Halliburton none too tactfully: "A lot of what you did in Omega Race we decided to follow." Halliburton mumbles and skulks away.

Robotron has something to do with "critical mass" or so I'm informed by DeMar. Robots take over the world, computers develop minds of their own and we're all left bowing before the

3 Slip through the opening in this fence or suffer the usual consequences.

gods of Three Mile Island—something like that. Appointed the task of rescuing your family—Mom, Dad and little brother, Mikie—from an assortment of mechanical beasts, Robo is one helluva responsibility. If you ask me, it's more of a "critical mess"; it also happens to be the best new game on the floor.

Gottlieb's new video, **Reactor** (by Tim "Star Castle/Rip-Off" Skelly), is not easy to explain, but I'll try. See, you're an oblong atomic particle that must keep itself from hitting the walls by a pulsating, ever-expanding nuclear core. The trick is to crash identical enemy particles against pins located on two of those walls—this reduces the swell of the core. Meanwhile, bonus points can be had by luring your foes with a decoy into the bounce chamber. There is no shooting, a minimum of strategy and a heavy-metal rock soundtrack to play by. "Reactor Rocks," already reads the t-shirt of one of Skelly's cohorts.

Finally, I come to Sega/Gremlin's **Zaxxon,** an even brasher spectacle than Reactor. Two factors immediately distinguish Zaxxon; first, its phenomenal raster graphics, which are similar to those of Turbo, another Sega product; and second, its perspective. In Zaxxon, you tool in a rocket diagonally from lower left to upper right (like in Vanguard); I guarantee, at the start, you'll have some trouble. What seems a simple climb over a wall can be cataclysmic if you don't judge the dimensions correctly. Actually, the wall is not flat, so scaling it requires some split-second maneuvering. Once you do get the swing of Zaxxon, though, it proves to be nothing more than a souped-up Scramble. And how's this for a t-shirt slogan: "Zaxxon Zux"? Only kidding.

My abbreviated tour concludes as the lights begin to dim on the Hyatt floor. I decide to visit one of several seminars scheduled concurrently. While most cater to specific operators' concerns such as technical points about machinery or business aspects of running an arcade, I find a more general session that's focusing on the continuing controversy between games people and communities. Judging by the comments of this rather large group, operators are desperately searching for a solution—any solution—to the problem which threatens to diminish their profits and conceivably put them out of business. Had I, for whatever reason, thought otherwise, this seminar makes perfectly clear that there is a great deal of trouble brewing in "river cities" all over America.

What is to be done? Well, for one thing, the manufacturers have contracted a publicity firm to help shine up the industry's muddy image. How much good that will do is another question. Indeed, one attendee cynically growls, "We are beyond good PR, beyond changing peoples' minds. People firmly believe that video games are an addiction. That's it." Ostensibly, all of the think-positive, we-will-overcome rallying the moderators try to instill goes for naught. Is the time truly past for solutions?

Saturday, March 27

Arriving this day in the AM, I continue my evaluation of the '82 crop. Two D & D (not deaf and dumb, stupid) games are creating some interest: Midway's **The Adventures of Robbie Roto** and Konami's **Tutankham.** Shown in prototype, Robbie Roto (created by Dave "Wizard of Wor" Nutting Associates, an independent design group that works closely with Midway) features a Pac-a-like character who dons a miner's helmet and scoops his own paths, enabling him to gather assorted buried treasures. Similarly, in Tutankham (short for Tutankhamen), you are enclosed in a brick maze that continues from left to right; the object is to snatch keys and open doors for prizes with them. Found patiently waiting on line for his turn, Larry DeMar sanguinely predicts that Tut will become an arcade hit. "It's the best Dungeons & Dragons game to come along so far," he says. "The only problem is you get to play too long—but that hasn't stopped operators yet."

By mid-afternoon, I sense a decided

4 Zaxxon is coming to take you away, ha ha. Avoid its missiles if you can.

resolve in the air—many operators already know which pieces they are pleased with, and which ones they will try their best to forget. Over at Taito's booth, **Alpine Ski,** a Japanese import that reminds me of Activision and Mattel's made-for-TV cartridges, is causing a mild fuss. Accustomed to ho-hum trade reaction to their innovations (Space Invaders, Qix), staffers are nonplussed by the response to this low-key, quietly infectious game. "We

thought we had a bomb, a real loser," concedes Keith Egging as he poses for corporate photos with two blushing blondes at either arm. "Boy, were we wrong."

Meanwhile, interest in Stern's **Frenzy**, the for-real Berzerk Deluxe, seems dismal. Then again, it's hard to say. Frenzy has been out on the streets for several weeks, but is that any reason for it to be totally ignored? On the other hand, the ghost town that is Cinematronics' booth, makes absolute sense. **Boxing Bugs, War of the Worlds** and **Jack the Giantkiller**, the company's first Japanese license (from who?), look like the kiss-of-death for this once-respected, but slowly fading games firm.

Jack the Giantkiller is but one of a slew of comical Japanese products which are literally littering the premises. All of them feature a semi-recognizable character a la Mario the Carpenter in Donkey Kong, an incredulous yarn (ie, Rock-Ola's **Fantasy**: "Pirates kidnap 'Cheri' from your Fantasy Island. The chase begins...") and, worst of all, kiddie-up, carousel-like scores. To be perfectly honest, I wouldn't mind smart-bombing them all. Get this one: As purple female shapes frug away on the screen, roller skaters and a witch try to grab them. Draw lines, like in Qix, to save your gals...all to a crash-crash-crash new-wave whip-style beat: What do you think they call it? Three guesses: Disco #1, Disco #2 or Disco #3. Courtesy of Data East.

Not at all stimulated by the list of seminars, I decide to attend Williams' cocktail party instead. There I meet Steve Ritchie, the originator of **Hyperball**, which essentially is Space Invaders inside a pinball cabinet and is also receiving some high marks down on the floor. Ritchie is best known for his pins creations such as Flash Firepower, and Black Knight, but sees no light at the end of the pinball tunnel and wants out.

"This is definitely my last mechanical game," he announces. "Actually, I didn't even want to do Hyperball, but Mike Stoller (Williams' prexie) forced me into it. My next project will be my first video."

What is the key to developing a hit game, I ask him?

"The key? Just think like a regular guy. Don't ever lose track of that. Don't ever try to go over the heads of the players. And never forget that the bulk of players are still kids."

By the way, Ritchie and Tim Skelly were seen by this reporter conferring in a private corner later that evening. Could it be? Is something coming, something good? Stay tuned.

Sunday, March 28

This is my third coin-op show, two AMOAs and now this AOE. If anything, I've learned the best way to work these affairs is to cruise continuously for the first two days, taking plenty of notes, conducting interviews, generally schmoozing as much as possible. Then comes Sunday, the day I put the pad away, bury the Bic deep in my jacket pocket; the day I come to play. Let's just say Sunday is *my* day.

PICK HIT: Robotron 2084.

Every job has its perks and in the video games business, free plays is about as good a perk as your gonna get. Sure, we've all played TV games, all know the feeling of reaching over and simply flicking the replay switch. But coin games are an entirely different story for one very simple reason: Quarters. At the AOE and AMOA, quarters don't exist. The shows are honest-to-goodness freebies.

Usually, my strategy is to select two games that I both like and think I may be able to reasonably progress at and then play them till my fingers crack. Last November, I chose Tempest and Mousetrap; this time I go with Robotron and Frenzy. Since Robo is constantly busy, I spend less time at it, but do learn certain key moves such as picking up my family members for extra points as soon as possible, shooting the red spheroids quickly lest they eject smaller "Enforcer Embryos" that chase after you like baiters, ignoring the hulks which are nothing but oversized pests (you don't have to kill them to complete a wave) and blasting a path from the middle of the screen (where you start) to the walls where it seems you have more security. You'll need it. As many as 80 robots clutter the screen in later rounds.

As for Frenzy, I had seen it before but never had the chance to play consecutively for an hour, no less ten minutes. Like Berzerk, it is a low-scoring, frustrating game, yet I still love it. Something about sniping at robots in a maze brings the crazed assasin out of me. Some of the essential differences between Frenzy and its predecessor are: 1) the robots—in Frenzy, there are two types, dumb (fat) and smart (thin); 2) the walls—in Frenzy, there are two types, corrugated (these can be chipped away) and solid (these can't and cause treacherous ricochets); 3) Otto—in Frenzy, this previously indestructible devil can be had with three blows, but reincarnates and streaks back across the screen twice as fast. I've heard of someone canning Otto eight straight times, though twice is quite a feat in itself.

After resetting Frenzy somewhere between 50 and 100 times, I can record no more than 4500 points. This, however, places me seventh on the machine's memory board. Maybe Larry DeMar had a point when he complained to me about Frenzy earlier in the weekend. "Why play a game that lets you kill yourself?" DeMar contended, referring to the samaurai ricochet shots that seal your coffin in a cinch. Did he ever consider that we might all be masochists? Huh? □

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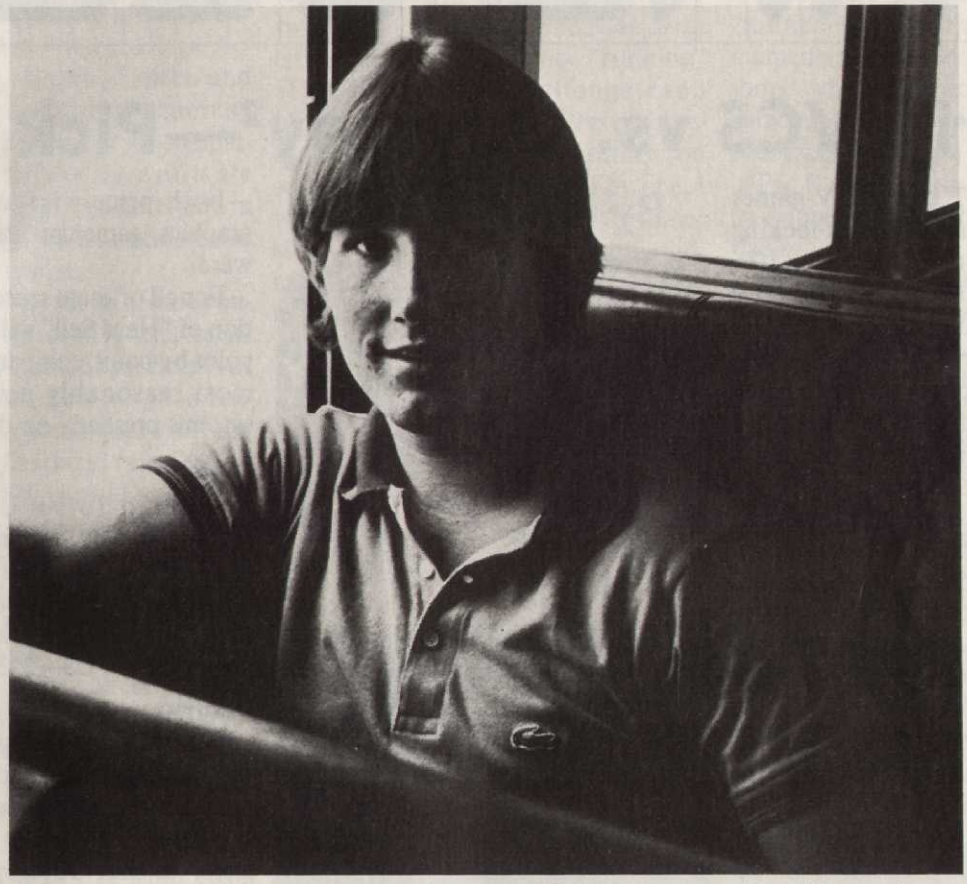
Brent Ragon saved a life with Red Cross CPR. Could you?



Fifteen-year-old Brent Ragon had no idea how soon he'd be using CPR to save someone's life when he completed his Red Cross training at a Youth Safety Seminar.

But, while Brent was riding the train home from that seminar, a man collapsed two rows behind him.

"He wasn't breathing, and I couldn't find a pulse," Brent recalls. "I wasn't scared. I didn't have time to be scared. I knew what to do and I did it."

If you were in Brent's place, would you know what to do?

We'll teach you.

Join us.

American Red Cross

Together, we can change things.

HARD SELL

Atari's VCS vs. Odyssey²—Pick 'em

By Randi Hacker

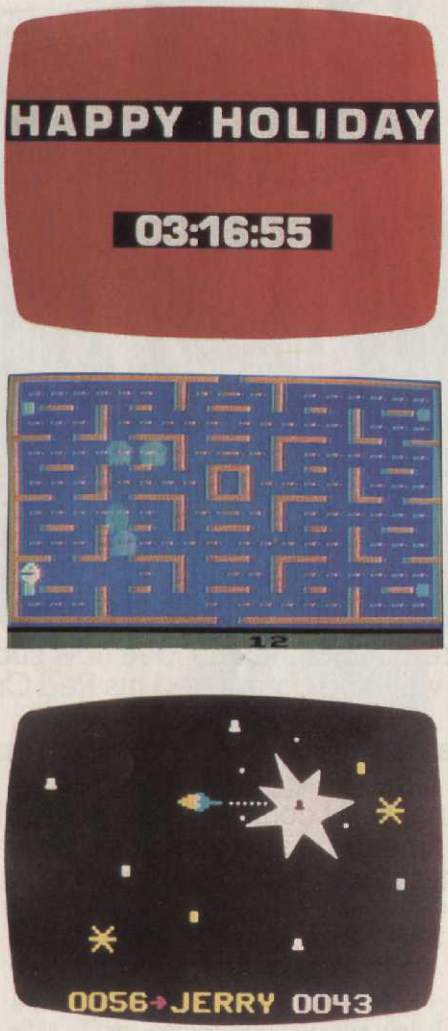
The Model-T of the TV-games business was a modest-looking plastic box named Odyssey 100. Released in the fall of 1972 by Magnavox, it would sell some 100,000 units before America tired of it. A year later, when Atari brought forth a home version of the ever-popular Pong game (it had 100,000 or so buyers), the games race was on.

These systems were not programmable, meaning the hardware contained all the games that could be played; cartridges, at the time, were something you plugged into your tape deck. In other words, software for TV-systems didn't exist.

This all changed radically in 1976 with the invention of the programmable machine. First, Fairchild Camera & Instrument introduced its $170 Channel F, featuring cartridges at $20 apiece. Bally (Professional Arcade) and RCA (Studio II) followed suit, but soon discontinued this line—as did Fairchild — when they found consumers less-than-enthused about such a fanciful expense.

Relying more on vision and savvy than sales figures, both Atari and Magnavox once again plunged into the TV-games business. In 1977, Atari released their Video Computer System (VCS), the machine that would become the standard for the industry. A year later Magnavox provided Atari with its only competition in the field. Not only did Odyssey² match the VCS' list price ($199), but included a keyboard in the package.

While Atari and Mattel, whose Intellivision system has received a great deal of attention since appearing on the scene in 1980, continue to slug it out in what seems a never-ending advertising brawl, Magnavox (now owned by the industry will deny that the VCS North American Phillips) is content to keep a relatively low-profile. But, few in the industry will deny what the VCS and Odyssey² are the more comparable systems. In fact, Bally's Professional Arcade, which is now owned by Astrovision, matches up with Intellivision more consistently than does the VCS —both price-wise and in terms of graphics, gameplay and available software.



SOMETHING FOR EVERYBODY: Keyboard Creations, Pac-Man and UFO.

For all of these reasons, the first edition of "Hard Sell" will be devoted to a point-by-point comparison of the two most reasonably priced TV-games systems presently on the market.

Price

A call to Toys-R-Us in New York revealed that, at least in some locations, there may be no more than a two dollars difference between the two systems. On sale, the prices were: Odyssey²—$138, VCS—$136.

Hardware

The VCS and Odyssey consoles are about the same size and weight. The essential distinction between the two boxes—aside from what may be inside them—is that Odyssey² comes equipped with an actual keyboard. Even though it's of the touch-sensitive, non-typewriter variety, it still works. Unfortunately, there's not a whole lot you can do with it. Only the Keyboard Creations cartridge allows you to play around with this alpha-numeric feature. By pressing the number 1 key, you are entitled to leave a message of up to 99 characters on the screen. Number 2 converts the TV into a timer; leave a specific message, set a time and go take a nap while the bread rises—an alarm will wake you out of your slumber. Number 3 is an actual digital clock and so on. And you thought that all you could do with your system is play Asteroids or UFO?

There's really not much to say about the VCS console. It has buttons for "reset" and "game select" (some carts have as many as 112) on top and "difficulty switches" (B for regular, A to handicap) located on the back. Most people who

have the VCS don't even know they own a computer.

Software

Right now, more cartridges are being made especially for the VCS than any other system. Since at least three-quarters of American households that are hooked into video games own "an Atari," this makes perfect sense. In addition to the 45 that Atari provides, Activision, Imagic, Apollo, Coleco and Parker Brothers are all busy churning out new games that are "Atari-compatible." Some even believe these carts are of higher quality than Atari's very own. That's certainly debatable and also not the point of this article.

Atari is best noted for its arcade conversions, such as Space Invaders, Asteriods, Missile Command, Super Breakout and now Pac-man, and for good reason—the rest of its catalogue, with only a few exceptions, is second-rate. It's also old. The same can be said about the Odyssey². Of the 40 carts, only its most recent creations are worth playing. Most innovative of those is Quest for the Rings, a combination board and video game. So successful was this game that N.A.P. has already added Conquest of the World and the Great Wall Street Fortune Hunt to what they are now calling their "Master Strategy Series." All sell for $49.95.

Most new Odyssey carts retail for $32.95 while Atari's Pac-Man costs $37.95 (though I've already seen it discounted to $26).

K.C. Munchkin VS. Pac-Man

(Editor's note: Though N.A.P.'s K.C. Munchkin game has been outlawed by a federal judge, it is nevertheless instructional to compare it with Pac-Man. You will see why.)

Anyone who buys Pac-Man because they love the arcade game with the same name may wind up disappointed. Other than retaining the basic game concept, it bears few similarities to the "real" Pac-Man. There are dashes instead of dots and "power pills" rather than "energy capsules." A square-shaped "vitamin"—no fruits or keys—serves as a bonus. There is no music.

Pac-Man himself doesn't look well. He's a bit square and seems to be lacking in the motor skills one might expect of him. He just doesn't zip around those corners in the maze like you're used to. Inky, Pinky, Blinky and Clyde?), they're all shadows of their former selves (no pun intended). They flicker and fade and it's really hard to tell when they've changed colors, much less see them at all. At least once a game I lose a life because I think they're still blue. Oh well.

There are eight game variations, only two of which ("fast" Pac-Man with either ghosts "jogging" or "running" after him) could challenge even novices. The exits on the top and bottom, at times, seem involuntary; on several occasions, as I passed by one, I was sucked in and spat out the other side. When the maze is completed, another one immediately—like, in half a second—replaces it. Plus there's no show.

This is not to say K.C. Munchkin is (sorry—was) so much better a game than Pac-Man—it's just better. And more fun. K.C. may also lack that lovable chubby figure, but he does have a charming personality and even smiles. Everytime K.C. comes to a halt, he turns to face you with his little antennas up and grins. In game five (there are nine), whenever K.C. moves about, the maze disappears. But holding him in one place not only causes the maze to reappear, but K.C. smiles repeatedly. This is always good for a laugh.

There are fewer dots in K.C. Munchkin (they move around) and so-called "munchies" give the Munchkid his momentary edge. Something about the sound when K.C. gobbles up a ghost (which, by the way, is identical in appearance—but more visible—to those in Pac-Man)—a crisp, final sort of munch—appeals to me more than the one in Pac-Man.

Since all things are not unequal, allow me to say that both joysticks stink. Too often they prevent you from making the move you had intended and usually you discover that you're suddenly the odd man out. In my humble opinion, this is a good enough reason not to bother much with **either** game (not that the courts have allowed us the

(Continued on page 76)

THE NAME OF THE GAME: Superstar software like Space Invaders and Asteroids is the only perceptible difference between the Odyssey² (bottom) and VCS (top).

HARD SELL

(Continued from page 75)

choice) and take a stroll back into the arcade.

Graphics

The visuals for both systems are angular. There is essentially no roundness to the figures, but this doesn't prevent you from recognizing which character is which. The rocket in Asteriods, for instance, looks like a small pyramid built out of sugar cubes; nonetheless, one still knows it's a rocket.

Except for some of the miraculous cartridges designed for the VCS by Activision and now Imagic, the graphics on this machine are suspect. Same goes for Odyssey².

Joysticks

These sound more provocative than they are, but surely everyone knows *what* they are by now. Atari packs three different sets of controllers (joysticks, paddles and keyboard) with the VCS while the Odyssey² comes just with one—joystick.

Both sticks move four-ways and have a fire button. The Odyssey's feels as loose as the VCS's is stiff. Neither is a joy when it comes to precision handling.

Still, the VCS gets the most out of its joysticks. Not only can you move and fire with it, but install shields, flip 180 degrees and hyperspace. I might add that I have no complaints whatsoever with the paddles.

Conclusion

In comparing the two systems, most everything about them is either equally pro or con. Regarding sounds, graphics, controls, features and so on. The most fundamental difference actually has nothing to do with the systems per se. Due to fabulous advertising, strong marketing and non-stop word-of-mouth, Atari has taken an almost insurmountable lead in the TV-games marathon. (They also already own some of the best arcade games thanks to their coin-op division.) Why is Atari able to buy the rights to Pac-Man and not N.A.P.? Simple. Because they're the Boss in this business, they call most of the shots. Meanwhile, the Odyssey², a capable though outdated system is forgotten by the vast majority of consumers looking to purchase games for their homes.

In any event, price-wise you can't beat 'em. The VCS or Odyssey², that is.

BOOK BEAT

How-to They Do

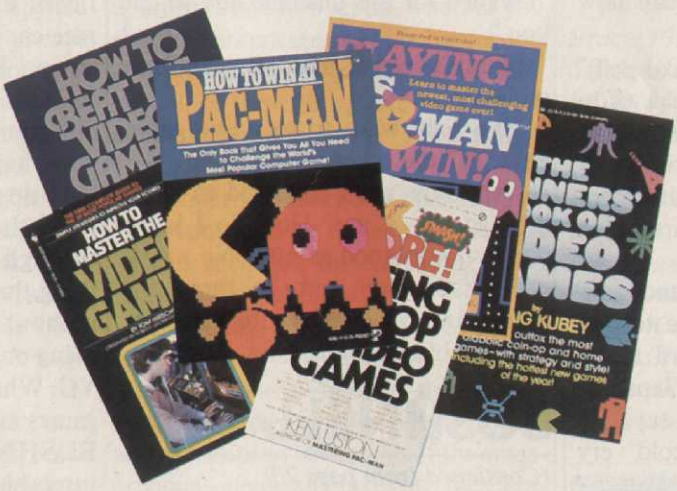
By Bob Mecoy

Publishers are betting a megabuck that books (a 15th century technology) are going to be just the thing that all you vidiots need to tame your favorite 21st century games. They may be right, but the way it happened is kinda funny. Book publishers have always been a little slow, so last fall, just about the time the 50 millionth video quarter was settling in a coin box, a memo went out to every book editor in New York. It read:

1. Lots of people are spending an awful lot of money on video games.
2. The machines are beating most of the people all of the time.
3. The players would like to play more and spend less.
4. Nobody cares about Rubik's Cube anymore.
5. Everybody who knows anything about cats has already done a book.
6. Somebody else has Garfield.
7. Let's do a how-to-beat video games book for all those frustrated gamers out there. They'll learn how to play longer and better their scores while we sell a ton of books.

And, lo and behold, after more than a few sleepless nights, the spring has brought forth a veritable harvest of video books. Every publisher's got one,. . .some even have three or four.

The first book to hit the streets was Tom Hirschfeld's **How to Master the Video Games** (Bantam/$2.95); getting out there first counted for a lot. It's been on all the bestseller lists despite the fact that it reads just like the set of directions you usually find on the front of a game cabinet and most of the games are already outdated.



Hirschfeld has chosen to provide game information in a rigid, six-step format. He has a diagram of the screen, explains the scoring system, and the various ways you can lose. He follows with a number of observations about the game and a list of strategies.

Hirschfeld seems to have done his homework well. His observations and strategies for thirty games are fairly comprehensive and easy to follow (1a, b, c; 2a, b. . .). You'll find everything from Astro Fighter to Missile Command, but not a Tempest, Qix, or Stargate. In video years, he's about a decade behind.

Hirschfeld's next offering, **How to Master Home Video Games** (Bantam/$2.95) again was the first of its kind to make the racks. This time he only covers 16 games—five each of Atari's and Activision's and six for Intellivision. Again, Hirschfeld's advice is sound, but most of the games are on the way out.

Honestly, who needs a book that neglects such new carts as Atari's Defender and much-ballyhoed Pac-Man? And what about the Odyssey[2] and Bally systems? Don't they rate a mention?

* * *

Ken Uston has made a career out of gaming. He started off as a stock broker, but found that he could have more fun making big bucks at the blackjack tables. Nowadays, he's banned from most of the country's casinos. Considering the fact that his *Mastering Pac-Man* is sitting on the bestseller list and **Score! Beating the Top 16 Video Games** (Signet/$2.50) will probably be up there soon, he may not mind. *Score!* works. Uston has managed to get most of the latest games—Tempest, Donkey Kong, Ms. Pac-Man, Stargate, Qix and Frogger—and he writes about them with all the attention to detail that you'd expect from an obsessive. His coverage of Ms. Pac-Man and Donkey Kong is particularly strong with diagrams of every board and complete instructions for vanquishing your multicolored foes.

Uston's methodology is excessively sane—watch, think, play, think, then play again. This is one book that really could improve your scores, but beware—Uston will have you making notes, drawing graphs and charting

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PAC-JUMP

(Continued from page 26)

do with it. For us, that's quite an accomplishment."

But is it a case of America asserting itself or of Japan rethinking its own priorities? It seems to be a little of both. In Japan, the latest trend is toward versions of less action-oriented, board-type games such as Go, Othello, Mah Jong, and Golf. Shooting and chasing, still popular as ever here, have been replaced by quiet deliberation. None of these games has yet caught on in the States; they probably never will. Take Golf, for example: Unlike in the United States, golf is a very expensive and relatively elitist pastime in Japan. Despite this, the Japanese are fervent followers of the sport. "Golf is on television every night," says Yoko Yama. "People are constantly reading magazines about it. They want to play but they can't afford to. Basically, the reason for this is our limited land space. With the video game, they can now play anytime they wish.

"We like intricate games like golf," Yama further explains. "It helps us to get rid of psychological frustrations. Anglo-Saxons also seek to rid themselves of frustrations, but with more activity. For us, these games are a kind of clean-up."

I don't really understand Yama's distinction, so I asked Nokajima to possibly clarify for me. "It's hard to explain the difference between Japanese and American people," he says, "I think we go more hot and cold very quickly, like aluminum. Americans — you get hot and stay hot for awhile."

I've got Pac-Man fever,
I'm going out of my mind.

—Buckner & Garcia

The scene is the Broadway Arcade. If you weren't familiar with all the sights and sounds you'd think a police raid was going on. Pac-Man has been on the streets for over a year (four months would be an ample lifetime for any other machine, thank-you), and still there are people standing in line for the two machines. One unit is in the hands of a Pac-master; at 300,000, he shows no signs of weariness and can talk fluently without disturbing his concentration. Watching him, I learn that this machine's program has been tampered with (which is usually the case after a game has been "maxed" by too many); it's taken him several quarters to discover that the first pattern differs from the second, the second through the fifth are the same, and the rest . . . well, he's working on that.

As I busily jot down all of this Pac-talk, there seems to be trouble brewing at the other machine. Two girls have been waiting behind this businessman-type for, they claim, the last 15 minutes. The man won't give it up. After each game (since he's a novice, they're short), he quickly dips into his pocket and deposits another coin in the slot. The girls are starting to get piqued.

"Hey mister, how 'bout letting somebody else have a chance?" one asks.

"Yeah, c'mon, man," the other cries. "Enough is enough already."

Mr. Wing-tip Shoes turns around and waves his finger in the girls' faces. "I waited for this machine and so can you."

"But it's been 15 minutes, man," one replies.

"We only want to play one game, anyway," the other says.

"And how am I supposed to know how good you are? How do I know you're not as good as *him*? No way."

His face plum red, he turns and pumps another quarter into Pac-Man. Such problems. Puck, puck, puck. □

BUSHNELL

(Continued from page 20)

play video games but found no acceptable environment for them to do it—particularly as a family. Kids love the games, but I didn't like the idea of them having to hang out in pool halls or junkie arcades in order to enjoy them. I think one of the real values of video games is that they allow parents to compete with their children. I wanted a family place where parents were encouraged to do that.

VG: Do you believe there is something essentially wrong with the arcades as we know them today?

BUSHNELL: Only in this sense: Arcades seem to be the domain of the teenager and I don't think it's necessarily good for eight-year-olds to be bumping elbows with a whole bunch of guys who are in their teens. Don't misunderstand —I have nothing against teenagers. I just thought there should be an environment more compatible for the younger child.

VG: As I'm sure you're aware, arcades are under attack nationwide. How do you react to all of this?

BUSHNELL: I believe it's another case of what I call "anti-technology" forces at work—the nothings having their say. Whether it's nuclear power or whatever, they're really afraid of technology. Also, people have an ingrained notion about leisure—essentially, anything that's fun is somehow not holy.

What they don't see is that video games are really the training wheels for computer literacy. They almost feel that it's magic that kids can operate computers and they can't. An awful lot of the basic skills that are necessary for computer literacy are learned on video games. For example, I don't see a significant difference between moving a race car on a TV screen and moving a cursor. These skills are not only allowing kids to become computer literate, but computer skillful. But, no matter what happens, you're going to always have do-gooders who don't understand what the hell's going on attempting through legislation to prohibit something that they perceive as a danger—without really understanding what's going on.

VG: What could be done to make video games more acceptable to parents?

BUSHNELL: I think the manufacturers have not been doing as good a job as they could in making the games more educational. They are educational now, but there's so much more that could be done, that should be done.

There are ways that you can teach problem-solving as part of the game-playing activity. Right now, there's a little too much emphasis on eye-hand coordination and not enough on algorithm solution. That's kind of a mouthful and it means something to me, but it would be difficult to explain.

VG: I'm sure parents would be glad to hear that something was being accomplished other than shooting down goblins from space.

BUSHNELL: I wouldn't discount that

as irrelevant, however. I think if parents put a stopwatch on their kids, they'd find they spend an awful lot more time watching TV as a passive involvement than they do on video games, which is an active involvement. I will guarantee you that active is better than passive in almost every case.

VG: Although almost everyone in the high technology and venture capital fields grants that you are a great entrepreneur, you do take some flak on the subject of management style. Your critics point to things like Grass Valley—the think tank you had at Atari, which obviously didn't get its name from the kind of grass that grows on lawns. Does this talk irritate you?

BUSHNELL: Not really. I happen to think that you can't manage extremely creative people in the traditional ways. Pizza Time has a think tank, also; that's just my belief about how a company should work. The essence of manufacturing is to tap the creative lifeblood of the engineers and give them an opportunity to express themselves. In applied engineering, the far-out things always take a blackseat. Yet, if you don't do the seedwork you end up with a very lackluster and uninteresting company.

So, I think it's necessary to take people—even if there are only three or four of them—and get them away from the factory as far as possible . . . and just let them look into the future to two or three years down the road. Those ideas will form the base of tomorrow's technology.

VG: It's hardly a secret, however, that it was this kind of unorthodox approach to management that lead to your falling out and eventual departure from Atari after Warner bought it.

BUSHNELL: Well, that's debatable. The fact remains every single one of Atari's major innovations originated in Grass Valley: the basic architecture of the Video Computer System, the XY-monitor, the high-speed microprocessor game drive, the 800 computer all came out of Grass Valley.

I just think there's no direct correlation between hard work and good results. You need leisure for perspective and work for execution. But all execution and no perspective leads to a bad product.

VG: Is it true that Steve Jobs came to you when he was working at Atari and told you about a "personal" computer that he and Steve Wozniak were building in a garage and you weren't interested in it from a business point of view? It's only interesting now, of course, since their company turned out to be Apple Computer.

BUSHNELL: I thought it was a good idea, but I was trying to get Pizza Time off the ground at the time and my legal situation with Warners was tangled on the matter of competition with them. I did, however, put Steve in touch with some venture capital sources.

VG: Let's move along to the latest venture you're involved in, the Catalyst Group. What is it about?

BUSHNELL: Well, as you know, this is a very active area for entrepreneurs. They're always looking venture capital sources for financing, but before they get to that stage there are often millions of decisions to be made, such as what kind of telephone system to install, which xerox to buy, whether to have an auditor, an attorney, what kind of accounting system to set up, whether you should incorporate as a subchapter corporation, where to go for venture capital. All of these things are basically of an administrative nature. The Catalyst Group—which now has seven companies under its umbrella—takes care of these functions for the entrepreneur so he can focus on his technology and marketing capabilities.

Essentially, it's a kind of pre-venture capital nursery for entrepreneurs. I'm attempting to help start-ups to not make the same mistakes I did. It's not altruism entirely, of course. If the entrepreneur's idea really takes off, the Catalyst Group owns part of the company.

VG: By the time the Catalyst Group gets its share and the venture capitalists get theirs, is there anything left for the entrepreneur?

BUSHNELL: Sure. Twenty-five or 30 percent of something is better than a hundred percent of nothing.

VG: One final question. How do you view yourself—as a technological pioneer or an entrepreneur?

BUSHNELL: Oh, I'm an entrepreneur. When I see a concept that makes sense, I have to put it in action. I guess I'm a person who's driven by the dream of converting fantasy into reality. The minute I believe in something I have to take steps to turn it into a reality. □

DOCTOR VIDEO

(Continued from page 68)

playing videogames, but are we to penalize the great majority because of the excesses of a small minority? Let's hope not.

The solution may be found when more adults sneak into the arcades to play Pac-Man or Space Invaders and find that it is not the mere playing of a videogame that is destructive; rather, it is time *not* spent doing other things, such as listening to music, studying, socializing or relating to family member, that can be harmful.

In conclusion, I would like to reaffirm my belief that videogames can and will continue to be useful adjuncts to rehabilitation. Their use with non-impaired populations will hopefully result in an increased awareness and acceptance of the role of microcomputers in all of our lives.

To order software, write: Dick Bracy, Ph.D., Psychological Software Services, P.O. Box 29205, Indianapolis, IN, 46224; Rosamond Gianutsos, Ph.D., c/o Life Science Associates (Computer Programs for Cognitive Rehabilitation), One Fenimore Road, Bayport, NY, 11705; Atari Program Exchange, P.O. Box 427, 155 Moffett Park Drive, Sunnyvale, CA, 94086; Apple Computer Inc., A Resource Guide: Personal Computers for the Physically Disabled, 10260 Bandley Dr., Cupertine, CA. 95044. □

COMING ATTRACTIONS

Video games go to the movies—we'll feature Tron and explore the latest in made-for-TV movie games.

Do video games cause tunnel vision? Dr. Video sees all.

Coleco goes "head-to-head" with Atari and Mattel—what is a confused consumer to do? Read HARD SELL, of course.

ACTIVISION

(Continued from page 31)

two or three months."

For example, in Larry Kaplan's Kaboom!, the mad bomber wears a devilish grin as he tosses hundreds of explosives down the screen—that is, until you reach the 10,000 point mark (3,000 would be enough to satisfy most gamers). Then, the bomber suddenly frowns and continues to mope until he finally finishes you off. That's what Dave Crane calls "embellishments."

"We like to do things like that as much as possible," he grins devilishly. "I'm talking about the little things—rotating tires, screeching brakes and other features you might not see in somebody else's games. That's a general concept here. I mean, who cares if a spaceship looks like a flying donut or something? Who knows what a spaceship looks like anyway?"

Jim Levy may sound like a braggart when he crows, "Activision has gone beyond the acceptable to the unexpected." □

BOOKBEAT

(Continued from page 77)

like a full-bore game zombie, which *Score!* clearly proves he is.

* * *

Simon and Schuster is the publisher with a whole array of video books. From their subsidiary Pocket Books and the editors of *Consumer Guide* comes **How to Win at Pac-Man** (Pocket/$2.50), a four-color pamphlet that wins the good-looks award hands down and does have the most complete and comprehendible set of Pac-patterns around. If that's all you want, then this is the book for you. S & S followed that up with **Playing Ms. Pac-Man to Win!** (Wallaby/ $2.50). Here again, you get a good-looking four-color pamphlet that has all the mazes you'll probably reach and a pattern for each one of them. This book comes by way of a new group, Video Game Books, Inc.; *How to Win at Donkey Kong* will be their next offering.

Finally, from S & S we have Michael Blancet's **How to Beat the Video Games** (Fireside/$3.95). The author's own story is almost as interesting as the book; it reads like *A Star is Born*. Vid whiz is discovered maxing Battle Zone by a *New York Times* reporter; two months later, he's the focus of an in-depth article about the games phenomenon. In comes the book offer. He takes it. Story ends there.

How to is a passable how to. It covers 20 games, including a few of the latest— his tips should be of value to experts as well as the lowest-ranking novice. It's a mediocre-looking book (no color) that can actually be read if you have the time or inclination. No outlines here. Blancet's writing style is very conversational; he gives good game.

* * *

The wild and craziest entry in this sweepstakes is Craig Kubey's **Winners' Book of Video Games** (Warner/$5.95). If you've ever had a friend try to explain how he was beating a game while doing it—you know, shouting over the booms and whistles at an arcade—you get the general idea of how this book reads.

Kubey hammers his way through coin-op and home video (he's infinitely better in the arcades) with the grace of Donkey Kong's mighty Mario the Carpenter. His approach—trying to give you a *feel* for the game—is fun, but runs dry about halfway through this exhausting, 288-page opus. It has good tips (especially in the interview with Tempest's designer Dave Theurer), lousy graphics and energy to burn. Unfortunately, Kubey is no Hunter Thompson, who is one of two famous persons he dedicates the book to.

* * *

These are only six of the approximately 20 titles that will soon be available in your local bookstore. Reading them can make a difference in your scores and also give you something to do while you're waiting around the house for the arcade next door to open . . . or get shut down. □

Call Them AT&Tari

Atari has bought every company in America and changed its name to AT&Tari, reports the *Off The Wall Street Journal*.

PLAY BALL!

(Continued from page 58)

leave it out?

The Apple II comes enclosed in a compact, lightweight case with a typewriter-style 52-key keyboard. Although letters are displayed in uppercase only, a number of devices can modify the system to allow it to show lower-case as well. The basic unit includes 16K RAM, but 32K or 48K is also available. Owners of a 16K machine can expand their system in 16K steps simply by inserting RAM chips into existing sockets. An interface for a cassette recorder, a built-in speaker for sound input and an output for black-and-white or color monitor (not TV set) is included. Eight expansion slots located under the case cover makes possible hooking up such devices as a printer, disk drive and modem for telecommunications. Joysticks and paddles are optional.

Unlike most companies, Apple provides detailed documentation about their computer. Encouraged by this, peripherals and software firms offer a wide line of products to mate with the Apple II.

* * *

Before you make your decision about which computer to buy, stop by your local computerama and play with the machines for awhile. When you find one you really like make sure you are comfortable with the feel of the keyboard, the display format and the keyboard layout. Take some time to *read*—not browse—through the instruction manual. Is it simple and clear enough for you to become "friendly" with the machine or does it seem menacing and difficult to struggle through? Then, finally, organize your intended applications on a piece of paper and chat with the computer salesman taking careful note of recommendations.

Don't be misled by the basic price. If you plan to use the machine for more than game-playing, you'll need more and more accessories, which will raise the overall system cost dramatically. Well, that's the bad news. The good news is that your investment may not only provide hours of entertainment, but may help you and others who use it in your careers and ventures.

Happy hunting! □

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